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GLEANINGS —IN— Bee Culture

VOL. XXXV FEB. 15, 1907. NO. 4.



Moving Bees in New Zealand



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GLEANINGS

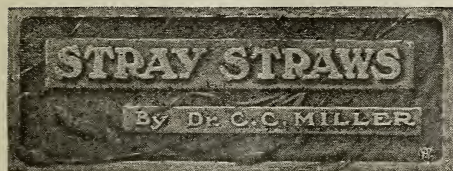
IN BEE CULTURE

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Vol. XXXV.

FEB. 15, 1907.

No. 4.



AT San Antonio some held that wax-worms could not be started without pollen. When I had more black blood than now, I saw many cases of worms started in sections, on the edge of the new comb, where, of course, there was no chance for pollen.

STINGS are said to be worse when buckwheat is yielding, and it is explained by saying that analysis shows twice as much formic acid in buckwheat honey as in clover. But please remember, dear friends, that late investigations have shown that the poison of the sting is something separate from formic acid.

SWISS bee-keepers, with their 36 experiment stations, are getting ahead of us. They have been experimenting at mailing eggs. Of 76 sendings, 22 were failures. From the other 54 sendings, 305 queens resulted, 80 per cent of which mated and laid. Virgins are sent to the stations to be fertilized, and then returned.

GEO. SHIBER wants me to explain why I did not have success caging queens to prevent swarming, as mentioned in "Forty Years among the Bees," p. 179. He probably has in mind that on p. 162 I report uniform success with the Doolittle plan of caging a queen ten days and cutting out cells. But the Doolittle plan did not *prevent* swarming—it was only the treatment of a colony after it had swarmed. It allowed the colony to swarm and then kept the whole force together without swarming again. But caging

the queen ten days or more when they had not swarmed did not prevent swarming, whether they had started cells or not.

THE REPORT of the National shows 9 men having 1000 or more colonies each; a total of 12,100, averaging 1344. They are: In California, J. H. Flory, 1600; J. F. McIntyre, 1000; M. H. Mendelson, 1700; L. E. Mercer, 1500; R. M. Spencer, 1200; in Colorado, M. A. Gill, 1000; Bert Hopper, 1500; in New York, C. B. Howard, 1000; in Texas, Willie Atchley, 1600. A little remarkable that not one has an odd number, all having even hundreds. [There are some names in this list that are not generally known to the outside bee-keeping world. They are probably of the kind who "keep still and saw wood," but not of the kind who would not be willing to impart all they know. For example, E. W. Alexander was for many years unknown to bee-journal readers; yet subsequent events have shown that no man was ever more willing to draw from his extended and varied experience and place the facts before the reading public—Ed.]

EDITOR HUTCHINSON thinks bottom starters superfluous. The bottom starter being my baby, I may be supposed to be partial to it, but I think I wouldn't be to the extra trouble of using it if I could without it produce crop after crop of sections such that no man could tell "which was the top and which was the bottom of the sections," as he says thousands of bee-keepers have done. I've been advising all to use bottom starters, but I'd really like to know if Bro. Hutchinson is right in saying that "with most bee-keepers it would be a wholly superfluous operation." [Bro. Hutchinson is usually right; but in this we can not help feeling that he is mistaken. If he will consult the commission men and honey-merchants, and all others who receive consignments of comb honey, we think he will find their universal verdict, where they know any thing about how the

honey is put up, is in favor of a bottom starter. The expert bee-keeper can doubtless get along without them; but we are of the opinion that the majority of them will find it an advantage, nevertheless, to use them.—Ed.]

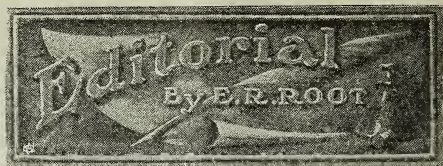
WHY IS IT that it's so much easier to unite bees in spring than in fall? Hundreds of times in spring I have put a frame of brood with adhering bees in a strange colony, and I remember no case of fighting. But I have seen more than one case of fighting when uniting in fall. May it not be that the explanation lies in the fact that the quantity of bees given was small in proportion to the size of the colony helped? Possibly if two colonies of equal size were united in the spring there would be fighting; and possibly if a combful or two of bees were added at a time at intervals of a day or two there would be no fighting in the fall. [What you say is probably true. May it not also be true that bees in the spring, just out of their winter quarters, are more ready to adapt themselves to unusual conditions because of the fact that they are ready to start anew, and the watchword is any thing and every thing to get ready for the harvest? Bees just removed from the cellar can be united and placed almost anywhere; but after they have been out for a time, and have marked their locations, the individuality of the colony becomes manifest, and then it is that the collective mass of the bees will refuse to accept new conditions.—Ed.]

EXCLUDERS are counted by some a necessity in keeping the queen out of section-supers, while perhaps the majority find them unnecessary. The secret of success in the case is to have the sections entirely filled with worker foundation. When only partially filled, the bees are sure to build no little drone comb, and the queen is just about as sure to go up and lay in it if she can, especially if drone comb is scarce in the brood-chamber. I wonder if there may not be some secret that may do away with the necessity for excluders in working for extracted honey.

Only lately it has come out that the Dadants never use excluders under extracting-supers, and now comes E. D. Townsend as an anti-excluder extractor. He adds upper stories on top, uses no excluders, and does not extract until the close of the harvest. In his San Antonio paper he says, "By placing the upper stories always on top, without extracting, we have been able to keep down swarming, and have an extracting apartment practically free from brood at extracting time. We have used queen-excluders extensively for several years, and find that about every third year we have excessive swarming when excluders are used; and as we get practically the same results without them, with the above management we are discontinuing their use."

It is well known that the Dadants are remarkably free from swarming. Aside from their big hives, may not one secret of it be

the absence of excluders? [This is an interesting question, and we should be glad to hear from our readers.—Ed.]



CALIFORNIA HONEY PROSPECTS FOR NEXT SEASON.

WE have received advice from California that 20 inches of rain has fallen in the southern part of the State. It is reported that the ground is thoroughly soaked, and that there is prospect for more rain. Unless our beekeepers in Southern California have another cold season this summer this large amount of rain means a honey crop. There were heavy rains a year ago, but they were followed by a cold backward-producing season, and the crop fell far short of the expected amount.

THE NAME "HONEY" CAN BE USED ONLY ON PACKAGES OF HONEY.

THE United States Department of Agriculture has recently handed down a decision that any substance, alleged to be coffee, according to the *American Grocer*, even if such only in name, must be real coffee and nothing else. This decision is eminently proper and correct from any standpoint. The same principle precisely applies in the case of honey. There should not be allowed any more on the labels the words "honey-drip syrup" for a glucose mixture. In fact, the word *honey* should not be hitched on to any concoction unless it be honey and *nothing else*.

It is said the authorities of the national pure-food law have put a ban on gelatin as now manufactured, and therefore the manufacturers of candies, etc., will have to resort to something else. Paraffine has been peremptorily barred already as inimical to health. Beeswax is probably the best substance which can be used in this connection; and as the candies frequently bring 50 cents to a dollar a pound, there does not seem to be any reason why it should not be used for candy-making to a great extent.

It gives us very great pleasure to acknowledge the receipt of the first number of *The Danish Bee-keepers' Tidings*, published and edited by N. S. Kristensen, of Aldersville, Roskilde, Denmark. The first page has an excellent cut of A. I. Root, our senior editor; on second page a Dovetailed hive is shown, and on page 12 a cut of the A. I. Root Co.'s

apiaries at Jenkintown, near Philadelphia. G. M. Doolittle is represented by two articles. We highly appreciate the compliment intended, and hope our young contemporary will long live to champion scientific bee-keeping in Denmark. The Danes have the reputation of leading the world in dairy matters, and we do not doubt they will soon excel in honey-production.

DENATURED ALCOHOL FROM THE GLUCOSE FACTORIES.

It is announced on pretty good authority that something like 8000 barrels of denatured alcohol were shipped to New York from Peoria. The cost price of the product is said to be 31 cents per gallon, f. o. b. factory or still. The price asked is 37 cents in New York. The fact that the product comes from Peoria, where the big glucose-factories are located, would seem to indicate that the glucose people are converting their starch, not into glucose, but into alcohol. If this is true, this is a good piece of news.

While the general subject of alcohol and its production has no particular interest for the bee-keeper, yet we are immensely interested when the product that has been formerly a serious competitor to honey by reason of its cheapness is converted into something else really useful. Verily the day is coming when our swords will be turned into pruning-hooks and plowshares.

FOUL-BROOD LEGISLATION FOR CONNECTICUT.

Two bills may possibly be presented to the Connecticut legislature for enactment this winter, one of which, it appears to us, is very defective. Among other things it provides that "the inspector shall give two days' notice, and is required to get written permission before proceeding with inspection." We talked with a number of prominent bee-keepers in regard to the practical working of this section, among them Dr. E. F. Phillips, of the United States Department of Agriculture, and Mr. Chas. Stewart, of York State, one of the best bee-inspectors in the United States. They all stated it would be very difficult to carry out this provision, and that, moreover, it *might* defeat very largely the object of the law, for the reason that some bee-keepers, if given notice of this kind, might remove certain diseased colonies, leaving the inspector to see only those that were healthy, allowing such bee-keeper a clean bill of health when, of course, he had no right to have it. Again, if an inspector happened to arrive at a bee-yard ahead of time his hands would be tied until the time limit had expired.

Another section provides that no bees can be destroyed without the payment of one-half their value by the inspector. This will bring up the complication of what the bees are worth, and, furthermore, might entail a large cost on the State. This of itself might defeat the passage of the bill, as we happen to know how the average law-maker looks at

anything that will pull very seriously on the State treasury.

Mr. Stephen J. Griffen, of Bridgeport, Ct., who, by the way, is very much interested in getting a good law, believes that such provisions would "so hamper the inspector" that he will be "unable to cure foul brood." He has offered another bill (without these provisions) that, in our opinion, is most excellent. It appears to be founded on the New York and Wisconsin laws, with some additional provisions that the York State people will probably incorporate in their own law later on.

Mr. Griffen is very anxious to hear from the bee-keepers of his State, especially those who would be willing to write to their legislators, or, better, go down to Hartford at the proper time and work for some good bill. It would be very unfortunate to have two bills presented, and the bee-keepers of Connecticut should agree on one or the other, and have only one offered. Copies of Mr. Griffen's proposed law can be obtained of him direct.

THE BEES OF WHITE AFRICA.

L'Apiculture Nouvelle for January 15 has a very interesting article relative to bee-keeping among the Kabyles, a race of white Africans conquered by the French in the course of their acquisition of the greater part of Northern Africa. These primitive people have two distinct species of bees which they cultivate in a domestic state—the common bee with which we are all familiar, and another species much smaller, and which they term the "wasp bee," from its color, and possibly, also, from its irascible temper, which causes all who have to do with it to be careful how they approach their hives. This, probably, is the *Apis Adansonii* of the entomologists. It is one of the most beautiful of all our honey-bees.

The principal source of good honey with the Kabyles is the African sulla clover (*Hedysarum flexuosum*), a very valuable perennial clover on the alfalfa order.

The bees are kept in long cylinders, or pipes, nearly five feet long, and the combs are cut out from time to time. There is a marked difference between the honey produced by the two species of bees.

The article was prepared from a book written by Mr. Hanoteaux, on the Kabyles and their customs. It is a pity we can not secure further information about these bees, from the pen of an expert bee-keeper.

PRICES AS A RESULT OF THE PURE-FOOD LAW.

MR. LOUIS SCHOLL, in the *American Bee Journal*, gives it as his opinion that it is not the pure-food law which has produced what he terms *high prices*. He says it is the demand stimulated by a short crop. But what created the demand? We have had short crops before, but the price did not rise on that account. It does not seem to us the price of honey is high; on the contrary, it is far below the European standard. The peo-

ple who buy honey in our cities—most of them—can well afford to pay higher prices for fancy honey. They willingly pay 50 cents a pound for good butter and 50 cents a dozen the year round for eggs. Formerly the most fastidious buyers were actually afraid to purchase honey. As a matter of fact they were afraid of being poisoned. The new law gives them *confidence* in what they see offered for sale, and it is confidence which is the root of all business. We do not expect the price ever to go down again to the old level.

THE NEW PURE-FOOD LAW WILL NOT ADVANCE PRICES ON ALL COMMODITIES.

THERE may be an impression among some that the new pure-food law will raise prices on all articles of food. This is not the case, however, and the tendency will rather work the other way if any thing, on some staples; for example, coffee, sugar, and tea will probably be cheaper, as large profits were made by misrepresentation in these lines. Seventy-cent Rio coffee, for example, was sold as the best Java at 30 cents, and so on through a long list. Consumers can not possibly lose any thing by having foods sold for exactly what they are.

THE EFFECT OF THE PURE-FOOD LAW ON THE SYRUP TRADE.

A STRAW sometimes shows which way the wind is blowing, quite as well as a sixteen-foot windmill. The *Louisiana Planter* of Jan. 26 states :

Fortunately for us, however, under the pure-food investigations, and from other causes, the consumers of syrups are becoming more critical, and unwilling longer to consume the vast quantities of flavorless chemically produced corn syrup, and are turning again to the sugar-cane for a supply. Georgia and Florida have been setting the pace for several years, and hundreds of thousands of gallons of desirable syrup are now being marketed throughout the country from these States. Here in Louisiana, several syrup-factories have been recently started, and inquiries are making into the possibility of manufacturing such goods even on a large scale.

There is no doubt the growers of sugar-cane in the South will very much benefit by the new law, as their product is no longer endangered by the artificial syrup which has hitherto been foisted on the public as "just as good," in fact, "better, for less money."

In line with this movement the United States Department of Agriculture has established an experimental syrup-farm at Waycross, Georgia, under the superintendency of Prof. H. W. Wiley. At this plant care is taken to produce syrup free from all chemicals. No chemicals at all are used in the course of its manufacture. No sulphur or sulphurous acid is used to bleach it, and even lime is not employed to clarify it. The only method employed is simply the application of heat to the juice, which is skimmed from time to time.

Thus we get back to first principles. Prof. Wiley truly observes, in the *Year Book of Agriculture*, that, if fastidious consumers do not care for the appearance of this syrup,

they will have to do without it, because the other kind is deleterious to the public health. Let the good work go on. Honey is by far the best syrup.

THE EDITOR'S TRIP TO CANADA.

THE editor has just returned from a very enthusiastic meeting of the Brant Co. Beekeepers' Association that was held at Brantford, Ont., Can., Jan. 29, 30, 31, which convention is reported by Mr. Holtermann elsewhere. We should have been very glad to attend the Ontario meeting, but it came at a time before we could get away. Usually the editor can not leave until after the first or middle of January.

On this trip we visited Mr. R. F. Holtermann, of Brantford, and saw his mammoth bee-cellar; called on Mr. J. B. Hall, of Woodstock, Ont., formerly the comb-honey king of Canada, and Mr. F. J. Miller, of London, Ontario, a strenuous advocate and user of the Heddon divisible-brood-chamber hive. On our return we stopped at Buffalo and witnessed Mr. Hershisier operate his wax-press, taking photos of each separate step, and inspected his bee-cellar. These various stop-offs will be made the subject of future articles.

BEE-KEEPING AS A BUSINESS.

QUITE interesting is the fact that *Conversations with Doolittle* in this issue and the article by E. W. Alexander, page 243, are both on the general subject of bee-keeping as an occupation. The first reading shows a striking similarity in the argument, even though there may be some differences of opinion. Both caution the man who starts blindly out to specialize in the business without being sure either of his ability to handle bees or of his love for the work. We believe they are right, for many are tempted to go in the business thinking that they can do as well as some neighbor, even though they may not be fitted in the least for it.

Mr. Alexander advises a young man to work for some large producer until he has proved to his own satisfaction that he can succeed, while Mr. Doolittle thinks it better for such a beginner to keep bees in connection with some other pursuit until he knows whether he is adapted to it or not. Both plans have advantages. Too many amateurs want to become professionals the first year, or to buy three hundred colonies of bees before they can handle thirty.

Both writers are too broad-minded to think of success as an accumulation of dollars; they count it of much value to be their own employers, to live in the open air, and to have an opportunity of studying nature. There is much in this. Sometimes bee-keepers do not realize the privilege which is theirs of working in the pure air and sunshine, but this is why they are so vigorous and why they so seldom have to give up their work because of failing health.

Mr. Alexander would have the beginner,

after one or two seasons' experience with some extensive bee-keeper, disregard the advice to go slow, because, after that much study, he ought to be ready to forge ahead. This is all right for the man with assurance and great will-power; but is it not true that some beginners might go *too* fast, spurred on by the natural enthusiasm following previous success in a small way? It would seem safer, in the end, to make a steady healthy growth, rather than to jump ahead by leaps and bounds. Harry Lathrop has well said that many could succeed if they kept only such a number of colonies as they could handle themselves; that, after that number had been passed, the question became one of handling men rather than of handling bees.

Mr. Alexander points out the advantages of having but one occupation, and calls attention to the fact that, by so doing, the capital to be put into business is undivided, as are also the time, thought, and energy. But Mr. Doolittle names several different lines of business which do not conflict so far as the time and energy are concerned. By far the great majority of our readers combine bee-keeping with something else—farming, gardening, poultry-raising, fruit-growing, etc.; but it is certainly folly to keep on with some line which can not be attended to properly because of a lack either of capital, time, or energy, or, in other words, have no iron in the fire that can not be kept hot. The whole question depends upon the circumstances connected with each individual case.

ARE OUR HONEY QUOTATIONS RELIABLE? HOW ONE BEE-KEEPER WAS JUGGLED OUT OF A FAIR PRICE ON HIS HONEY.

A CORRESPONDENT intimates that the quotations made by some of our commission men and honey merchants are not reliable. Some cases are cited showing that the actual conditions of one market were falsified in order to bear down the market. We are afraid there is some truth in what he says.

Very recently we learned of a case where a Southern producer shipped a large consignment of honey to one of our large cities. At the time of making the shipment he notified one commission house that such consignment was on the way, and that he would negotiate for its disposal in person. As the shipment was a large one it now appears that this house immediately notified all the honey-buyers of that city, and that they conspired to depress the market temporarily. Well, when our Southern producer put in an appearance in the city he went to Mr. Commissionman and was immediately told that the "market was greatly depressed," and that he could offer him only so and so. He was *very sorry* (?), but it was the very best he could do. The Mr. Southern Honey-Producer then went to the other buyers in the city, and they, of course, told him the same story. Very reluctantly he went back to the first commission man and turned over his shipment, which was large. Did these fel-

lows afterward divide up the shipment at the reduced price? We don't know.

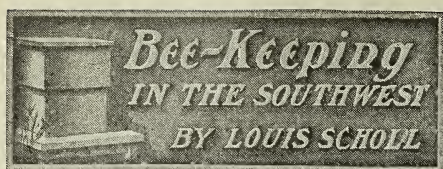
Mr. Southern Honey-Producer did not suspect at the time that there was an agreement to hold him up; but he learned afterward that the market was a good deal higher than it had been quoted to him, and that this very same honey was disposed of at a great advance over the figure he obtained. But unfortunately during all this time he was innocent of what was going on.

He sent another shipment to the same city (still ignorant of what had been going on), went around to all the buyers, and was told the same story. He went back to commission man No. 1, and stated that he could not afford to sell at the prices offered, and added that he would go to another city, but he did not say to whom nor where. He did so, and disposed of his crop at a fair price. He then went back to the first city and was unwise enough to tell his commission man that Mr. So and So, of blank city, had paid him a great deal better price, but he added that he had some more honey that he was going to sell to Mr. So and So again. Here he made his mistake. Listen. When the next shipment was sent to city No. 2, commission man No. 2, the one who paid the better price, immediately told our honey-producer that he paid him too much on the former shipment, and that he could not afford to pay him any such price again. Well, he went around to the other buyers, only to hear the same old story. The poor man was up against it, and was finally compelled to unload.

Subsequent developments seemed to make it appear that the commission man in the first city used the long-distance phone and told the commission man in the second city that the Southern honey-producer who was coming to see him had a shipment of honey that he must unload, and not to offer more than a certain price which he had offered. Of course he obeyed instructions. If Mr. Honey-Producer had sold on sample before the buyers had him at their mercy *he would have saved nearly a thousand dollars.*

Perhaps we have not given the facts exactly as they occurred; but the general outline is correct. We have no disposition to censure anybody, for we believe the majority of commission men are reliable; but if this sort of thing is to continue against the producer, we may be constrained some day to give the full facts, with names and all. Perhaps the readers may think we ought to do so in this case; but if the parties concerned see this, and the shoe fits, a word to the wise will be sufficient. The honey market is even now altogether too low, and GLEANINGS can not consistently allow such practices to go on without turning on the lime-light.

Moral. Don't send a shipment to a city without first getting quotations on it from a reliable house; otherwise you will be at the mercy of the city buyers, who may conspire against you. Again, don't tell any buyer or commission house to whom you are selling or have sold; and, least of all, to whom you propose selling.



PEACH-BLOOM IN JANUARY.

In the South, fruit-bloom is very early—much earlier than “up north;” but this year it has come even earlier. Some of our peach-trees are in “full blow,” and bees are on the blossoms. Occasional pear and other fruit-trees have been in bloom since the first of the year. See page 254.

The weather has been warm, the thermometer registering 82° in the shade in the middle of January. There have been only a few cold days and frosty nights; but bad weather may yet be expected during this month, and even in March; so we are unable to tell what the outcome will be. A late spring with cold winds and frost is a great drawback to our bees. The early bloom stimulates them; and as brood-rearing advances, the brood-nest is spread out; a sudden cold wave overtakes the bees unawares, and brings disastrous results. It is during such seasons that extra hive protection would be essential and profitable. The stores of every colony should be looked after also, as the heavy breeding soon depletes the honey on hand, and a shortage may mean a loss of much young brood. This latter is more often the cause of brood losses than the cold weather. It is simply brood starved for want of food which the bees were not able to supply on account of the inclement weather. A little feeding and a little extra care may mean money in the owners' pockets.

A VALUABLE FEBRUARY BLOOMER.

Nothing stimulates early brood-rearing in my apiary here like the triple-fed barberry (*Berberis trifoliata* Moric). This shrub is more commonly known here as “agerites,” its Mexican name. It belongs to the family *Berberideæ*, or barberry family; is an evergreen, and grows mostly on gravelly slopes and hills of Southwest Texas, often forming thickets and along field and pasture fences where the seeds have been scattered by birds, which are very fond of the ripe berries. The wood is hard and yellow. The leaves are palmately trifoliate, or in threes, and each leaflet is stout and stiff, lobed into three to five lobes, each with a sharp spine. The flowers are small, bright yellow, and borne in dense clusters along the entire stems. Their great number and fragrance fill the entire woods during their bloom. The ripe fruit, in May, is small, red, acid berries about the size of small peas, which are delicious to the taste. These are much used for jellies, pies, tarts, etc., and also for making barberry wine.

As a honey-plant it is one of much value to me. It blooms here very early in February, and the bloom continues for several weeks, some bushes blooming later than others. The pollen yield is abundant, bright yellow in color. It also furnishes honey, and the bees build up rapidly. When locating apiaries it is always observed that there is an abundance of “agerites” within reach of the bees if these are located in localities where the shrub prevails. It is the second bloomer of the year on my list of Texas honey-plants, coming after mistletoe, mentioned in Jan. 15th GLEANINGS, and just before our main fruit-bloom. See illustration, p. 254.

SHALLOW DIVISIBLE HIVES.

Another season of hive preparation is at hand, and the question of the kind of hive best suited for our purpose comes up in our minds. It is a hard matter to settle this question for everybody; but it can be settled by an individual for himself if he is careful, and conscientious in his opinions regarding the advantages and disadvantages of a hive. Bearing this in mind I have experimented with many kinds of hives. My conclusions were that the regular Langstroth-depth hive is better suited to the greater majority of the bee-keepers, for several reasons. One of these is that such a hive is of standard dimensions, or at least put out by the majority of manufacturers, and used already by most bee-keepers. It is best suited for the great majority who adhere to the methods and manipulations applying to the Langstroth hive, for a different hive needs a different system of management with it. The regular Langstroth hive is also best suited to those who do not handle their bees at all—the class who boast that it is standard, and “good enough for me.” Arguments may be in favor of letting such persons use box hives; but might it not be possible that simply the fact that the bees are in regular frame hives enhances their value—for instance, if sold?

But the Langstroth hive does not “fill the bill” for all bee-keepers. For the *intensive bee-keeper*, though he may manage only one apiary or run many on an extensive scale, the divisible hive and the system that goes with it, mind you, will be found to possess many advantages over the deeper-frame hives. It is a noted fact that those who have tried such hives carefully, and adopted them, do not hesitate to extol their merits, and remain advocates of them.

Generally, those who decry the merits of such hives have either not tried them fairly and conscientiously or they have used the divisible hive with the system of management that belongs to the Langstroth. This is one thing to be remembered in discussing the merits or demerits of a hive. If the manipulations used with deep-frame hives are applied to the divisible, sight is lost of the real benefits to be derived from the use of shallow hives. Unless the right kind of management belonging to the divisible hive is used with it nothing will be known about the merits

of these hives. It takes an entirely different system to succeed with the shallow-frame hives from those with deep frames, as whole cases, instead of frames, are handled in the manipulations in the apiary as well as in the shop and the honey-house. Such manipulations alone lessen the work and expense, and increase the profits from the bees.

More bees can be kept, as the manipulations are fewer. More honey can be taken with shallow frames, as a whole case of ten combs can be taken off; whereas single combs are taken out of deep supers. This applies to the production of all three kinds of honey—section honey, bulk comb, and extracted. By smoking the bees down, taking off the super rapidly, and jouncing it up and down a few times, it is ready to take to the honey-house, where they are stacked up crosswise of each other to allow the remaining bees to escape and leave through the escapes at the windows. This is by far the best and quickest way to remove honey. Many bee-keepers are using these shallow supers, not only for comb honey but for extracted. It is easier to uncap shallow combs, one slice doing a whole side, and they are handled in pairs in the extractor, and when they are replaced in the returning supers.

For tiering up, the shallow supers are better, as the bees are not placed so far from the brood-nest, causing them to begin work in the supers earlier. Full sheets of thin foundation can be used, which is another incentive to start super work earlier, and a shallow super will be filled at times when they would not begin in a deep one.

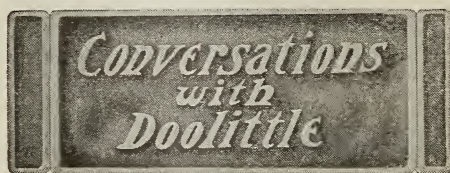
As brood-chambers, such cases suit me admirably. Much more can be accomplished by handling whole cases in the hive manipulations in the apiary, in the early spring, during swarming time, the honey-flow, and for preparing the colonies for winter at the end of the season's work. The brood-nest can be examined by just tilting the upper case back, and queen-cells can be easily detected along the bottom edges of the combs. If the cluster is located toward one side or one end of the hive, the simple reversing, end for end, of the upper case will force them to remodel the brood-nest. This is an easy way to practice spreading and stimulating brood-rearing. When brood is to be given to weak colonies a section is exchanged with that from a populous one—an item of only a few minutes. During swarming time this is practiced to a great extent to "knock swarming in the head." I know of nothing better and easier than to tear the mass of brood asunder and fill the space between with empty combs for the queen. This is done in a jiffy with the shallow hives by simply slipping a case of shallow all-worker combs between the two brood-cases. Now we shall have three cases instead of two of the brood-chamber, in ideal condition for the honey-flow. The upper case will be filled with honey, the brood being crowded down. The new surplus-honey supers are given *between* this and the brood-nest, and are filled with a vim that does not exist when supers

are simply set on top in the ordinary way. An extra super of extracted honey is thus obtained before the main honey-flow.

For a wintering hive I have found no objections to it. It is deeper than the L., hence better suited to the cluster. The only objections that have ever been mentioned are made against the spaces between the frames of the upper and lower sections of the brood-nest; but I do not think there is any good ground for this. Why, it affords the bees of the cluster a way through which to move within reach of stores without going clear around the combs. Messrs. Doolittle and Danzenbaker, I believe, are both advocates of an opening through deep combs for this very purpose.

Objections are also raised against this open space during the laying period, that it interferes with the queen. But why do we have colonies just as strong in bees as with deep combs?

As an all-around interchangeable hive, from the ground up, I prefer the divisible hive.



SHOULD BEE-KEEPING BE MADE A SPECIALTY?

"Say, Mr. Doolittle, to make a success of bee-keeping should the novice aim at the business as a specialty, or would you advise keeping bees in connection with some other pursuit or pursuits, so that he need not have all his eggs in one basket, as it is termed?"

"Bees can be kept in connection with other pursuits, and that with success, as I well know; but if success is obtained, special attention must be given the bee-keeping part of the pursuits, and special attention should be given to the others as well, if you are to succeed in all."

"Do you think it possible to give special attention to three or four different pursuits at the same time?"

"Why not? Suppose you are working the bees in connection with dairying and gardening. The cows need special attention, in the summer season, at morning and night, just at a time when the bees can be worked at the least advantageously, and thus you have left the warm hours of the day to attend to the bees. They should not require all of this time every day; and during the times when they do not, then you can pay special attention to the gardening. There should be no difficulty in working these three at one time, giving special attention to each, just at the time they may require it."

"But there are those who make a specialty of bee-keeping, and succeed, are there not?"

"Certainly. But you were asking about what a *novice* should do. Captain J. E. Hetherington once told in my hearing at a bee convention how, when he was a young man, he wrote to that father in bee-keeping, Moses Quinby, asking him if he would advise a young man to make a specialty of bee-keeping, and Mr. Quinby's reply was *no*. A year or two before father Quinby died, Mr. Hetherington referred him to this letter and asked him how he would *then* answer it; and he said that his answer would still be the same. When Captain H. pressed him for his reason for still thinking the same, Mr. Quinby's answer was, 'Just look over the list of those who kept bees twenty years ago, and have succeeded so well that they are still content to follow the business. How few they are!' And yet Captain Hetherington made a success at his specialty, bee-keeping, numbering his colonies by the thousands. You see he was an exception to the rule."

"Then, if I understand you and Mr. Quinby, you do not advise entering into bee-keeping as a specialty until a person has proven his ability at bee-keeping by giving *that* special attention, together with some other pursuit or pursuits, until he is satisfied that they want to make apiculture a special calling in life."

"That is it exactly. I consider it foolishness for a novice at bee-keeping to put \$500 to \$1000 of hard-earned money at some other calling in life into bees, and start out with bee-keeping alone as a specialty before he is at all familiar with the many intricate problems of the pursuit, expecting that he will make a success of such specialty; for, in 99 cases out of 100, the 20 years spoken of by Mr. Quinby will find him out of the business, a very much disgusted man, with his investment nearly if not quite a total loss."

"But you said Mr. Hetherington succeeded."

"Certainly. He was brought up under Mr. Quinby's influence, which was thorough and careful. The trouble is that 99 out of every 100 who enter into bee-keeping are not *positive* enough in their methods to succeed as specialists. The novice is apt to *think* that a colony has a good queen; that a colony has *enough* honey for winter; that its combs are *good* enough, etc. The trouble is they do not *know*; and that is why so many hives are piled up in fence-corners or old buildings all over the land, showing the many who have entered into bee-keeping, and why they have failed."

"But does not the location have much to do with it?"

"Yes, but a good location will not overcome a slipshod, go-as-you-please way of keeping bees. However, a good location, with a man fitted for a specialist, will roll up a success which the world will almost envy. Captain Hetherington had a good location, which was an advantage to him without doubt."

"Do you think it possible for a man to be equally interested in several pursuits at the same time?"

"Perhaps not."

"Then why not give a young man two or three different pursuits till he finds out which he likes best?"

"That is my idea exactly. In my opinion, it is not best for a young man to start out as a specialist. Many of the bee-keeping specialists of to-day have become such by getting a few bees, when they soon formed a liking for them, and soon afterward they found they were neglecting their regular business for the bees, their love increasing for the bees more and more as the years went on. Then they soon became *bee-keepers* and the other business was dropped."

"Did you start out with bee-keeping as your only business?"

"No. I was born of farmer parents. I grew up a farmer's boy. I loved the farm and its work, or at least I thought I did."

"Then how came you to be a bee-keeper?"

"One winter an old bee-book fell into my hands and I read it. It said that a few hives of bees belonged to every farm—just as much so as did the cows, horses, sheep, pigs, and chickens. My father was consulted in the matter. He had kept bees when I was a baby. He said I could get a hive or two, but that there was little profit in them. I purchased two colonies of bees in the spring of 1869."

"Did you expect to go into bee-keeping extensively?"

"No. I figured that I would keep ten colonies; that these colonies would give me twenty pounds to the colony, of surplus honey. Honey was then worth 25 cents a pound in any of the villages about us. The 200 pounds from the ten colonies would bring me \$50.00 each year on an average, and I would have \$50 to help along with the taxes and other expenses on the farm. But the bees increased, and with this increase my love for them increased faster than the increase of the bees; and it was then I found out that I did not love the old farm and the work that went with it as well as I supposed I did. This was against my father's wishes. He wanted me to be a *farmer*."

"But bee-keeping was *farming*, was it not?"

"Not in the eyes of my father, for he saw that this love for the bees was the cause of my neglecting the other legitimate work of the farm. One day when I was revolving in my mind as to how much longer I would stick to the old farm, I was in the chamber over our living-room. My father and a neighbor came into the room below and entered into conversation. I was soon aroused from my reverie by what was being said, for I heard this in my father's voice: 'I have always wanted and expected that Gilbert would be a farmer. I have hoped and *prayed* that he would make a failure of bee-keeping; but it looks now as though he were going to succeed in spite of my hopes and my prayers.' This gave me an idea that the breaking-away from the old farm would not be as hard as I expected it would, and so I planned, and did leave the farm one year

later, launching out into bee-keeping as a specialty."

"Then why would you advise me not to make a specialty of apiculture?"

"Because you are at the stage I was when I bought the two colonies; only, if I read you aright, you would buy 50 to 100 colonies to start with, which, in 99 cases out of 100, will or would prove your ruin. Hold on to your business till you know you *love* bee-keeping well enough to let all else go; and especially that you can make a living success with the bees."

"What do you mean by a living success?"

"P. H. Elwood, one of the successful specialists at bee-keeping in this State, once said at a bee convention that a man who could successfully manage 100 colonies of bees possessed ability that would command an annual salary of \$1000. But salaried positions are uncertain, and less than \$1000 a year may be called a living success. To have a home, the fresh air of the country, and a comfortable living, is often a greater success than a \$1000 salary, which is liable to slip away from you at every turn of the wheel of fortune with your employer; and especially where such salary ties one up to the impure air of the factory and away from God's blessed sunshine, which is generally the lot of those who are dependent on a salary for a living."

"Well, I thank you for the time you have given me, and for your many candid expressions regarding apiculture as a specialty."

Gleanings from Foreign Fields.

BY W. K. MORRISON.

There are, according to the government report for 1905, 1,050,127 colonies of bees in Austria, which return about 14,000,000 lbs. of honey and 600,000 lbs. of wax during the year.

The price of honey in Berlin, Germany, is as follows: Extracted, 25 cts. per lb.; comb, 37½ cts. per lb. The price in Bremen is, comb, 30 cts. per lb.; extracted (strained), 27½ cts. per lb.—*L'Apiculture Nouvelle*.

According to a census made in 1904, Hungary contains 582,184 colonies of bees, of which 365,930 are on movable frames. These produced, during the year indicated, 27,446 quintals of honey, valued at about \$500,000. The wax produced amounted to 1706 quintals, valued at about \$70,000. The honey is sold usually at 10 to 20 cents per pound, and the wax at 30 cts.

MALTED HONEY.

Mr. Thomas Bolton, of Hamilton, State of Victoria, Australia, has succeeded in placing on the market a new food which he terms malted honey. He does not state it is a med-

icine, but says it is an article to be placed on the breakfast-table. It is a combination of pure malt extract with honey. Judging by the way other malted foods are disposed of, this new aspirant ought to succeed very well. It looks to us at this distance as though this malted honey would be a good thing. How would honey and butter frozen together answer during the winter as a food for the gods? Try it on yourself first. It is good. It is just the thing for consumptives.

AN IMMENSE IRRIGATION SCHEME FOR VICTORIA, AUSTRALIA.

An immense irrigation scheme has been proposed by two engineers to the government of Victoria. They propose to irrigate about 750,000 acres of land, and supply electric power to Melbourne and other cities to the amount of 25,000 horse power. There is no doubt at all that irrigation helps bee-keeping, because on a given area the amount of vegetation grown is much larger, and the crop seasons more certain. Of course, alfalfa will be grown; but it may be that, in the mild Australian climate, sulla or sainfoin would be better. Perhaps it is that oranges, peaches, lemons, etc., will be extensively planted. In any event, it would seem as if this were a good thing for bees in Australia. It will be observed the Australians are proceeding along American lines. This is particularly the case in bee-keeping. Every American wishes them success.

"THE GOOD OLD ENGLISH BEES."

In England there is a decided tendency to stick to the black bee—sometimes termed "the good olde Englishe bee," as the equal, at least, of any foreign bee, if not a little better. This does not promise any great improvement in the honey-bee, as has been effected in the breeds of cattle, horses, sheep, swine, dogs, and poultry. England owes its finest horses to Arabian blood, cattle from the continent of Europe, sheep to Spain, swine to the north of Italy, dogs to Spain and Greece, and poultry to many countries. The beauty of the yellow races of bees ought to appeal to their bee-breeders, more particularly as Englishmen know beauty is very far from being skin deep. Our most beautiful horses are the swiftest, our prettiest cattle the best milkers, and the handsomest poultry the best layers. One thing is certain, *Apis Americana* will be very handsome indeed.

The necessity for greater care in the choice of foods is indicated by a careful study of the death rate of the United States and other countries. For example, it is estimated of the 6,000,000 babies that will be born only to die during the next ten years at least 3,000,000 of them could be saved. Such figures are appalling. That food has much to do with this list is well borne out by the fact that children of American parents die faster than those of foreign-born parentage. This is attributed by medical men to the fact that

the American mother uses "patent" foods for feeding infants.

No food can excel honey as a food for children, and it is not patented.

It is not generally known why honey improves by being kept for some time, either on the hive or off. It improves in two ways—first, by the evaporation of some of the water present in it, also by the addition of formic acid, which gives that rich "biting" flavor we all desire. But it also improves by the change of the sucrose (cane sugar) which slowly but surely "changes" of itself into dextrose. The national pure-food law allows 8 per cent of sucrose in honey; but even this amount may be eliminated by keeping the honey in a dry warm room for a period. Honey improves with age.

THE THICKNESS OF THE COMB OF *APIS DORSATA*.

The *American Bee Journal* has a paragraph calling in question the statement that *Apis dorsata* builds a comb with cells $2\frac{1}{2}$ inches deep; but this is an actual fact, and the thickness of the comb is 5 inches and more where it is attached to the branch of a tree. This is for the storage of honey, and also supplies a great hold on the tree. Of course, the comb tapers lower down where the brood is reared. It is probably true the cells at the top of the comb are not six-sided, because the stretching caused by the great weight of so large a comb, together with the weight of one whole colony of bees, would serve to draw the cells out of shape. It should be borne in mind that *Apis dorsata* builds but one comb in the open air, attached to the branch of a lofty tree or overhanging rock. Occasionally they build more combs, but not often. The wax they make is also softer than ours from *Apis mellifica*.

BEEES OF NORTHERN AFRICA.

L'Apiculture Nouvelle for December 15 contains an interesting article read before the French Association for the advancement of science on "The Bee in Libya." Libya, it may be noted, embraces Tunisia, Tripoli, Algeria, and Morocco, with the hinterland of the Sahara. It is the land par excellence of the date-palm, which is a liberal honey-producer; romarin (rosemary) and wild thyme are also abundant nectar-yielders in that famous land. The paper is by Prof. Lefebure, who gives the history of bee-keeping in North Africa from the time of Herodotus to the present day, giving us glimpses of the way apiaries are and were kept on the Nile itself, floating up and down with the seasons. Some very excellent authorities consider Libya the cradle-land of our race, and that we are not Caucasians but Punics. It seems very probable our black bees came from North Africa originally. No one has, however, arisen to explain why it is they have a yellow race of bees in Egypt on the eastern end of North Africa, and the same on the western end (Senegal), with 3000 miles of black bees separating them. Here is a conundrum worth studying.

THE PESTS OF CIVILIZED COUNTRIES.

Whenever it is proposed to introduce a new animal or insect we are at once confronted with statements about the English sparrow, the rabbit in Australia, and the mongoose in the West Indies. These are largely newspaper exaggerations similar to the comb-honey lie, and ought not to appear in the columns of a reliable paper. The United States owes an immense debt to other countries for many valuable introduced animals and plants. The greatest pests in this country are native animals such as the wolf, coyote, prairie-dog, and jack-rabbit. In South America it is the puma. In Australia it is the dingo dog. In New Zealand it is the kea bird. In the West Indies the mongoose (a kind of ferret) almost destroyed the rats—a very serious menace to tropical agriculture. If there are any valuable species of bees in other parts of the world, let us experiment with them, free from prejudice and fear. Our bees are not "natives," neither are we.

A DEPRESSED HONEY MARKET IN AUSTRALIA; HONEY IN BAKED GOODS.

The Australian bee-keepers are up against a hard problem to solve—a better market for honey. They have tried the English market, which will not purchase their honey at any price, as they dislike the peculiar flavor. Probably the home market can be developed. The baking trade (large factories) takes up a good deal of the ordinary grades of honey in this country. Probably the Australians buy their fancy cakes in England, where the biscuit trade uses sugar almost exclusively; if so, there is an excellent opportunity for an Australian baking-factory to step in and capture the trade, for honey is undoubtedly superior to sugar for this purpose. If our friends of the antipodes have never tried honey bread they ought to at once, for they will probably admit very quickly it is somewhat superior to any bread they ever tasted. For the children it has a wonderfully attractive power, quite equal to the best confections. Extracted honey of a good grade is selling in Melbourne and Sydney for 6 to $6\frac{1}{2}$ cents per lb.

WHAT THE GOVERNMENT OF BELGIUM IS DOING FOR APUICULTURE.

Prof. E. Van Hay contributes to the Dec. 15th number of *L'Apiculture Nouvelle* an excellent account of the present condition of bee-keeping in Belgium. In connection with the agricultural school at Gembloux a complete course of instruction in apiculture is furnished, divided into five parts, requiring about 200 lessons. First is the theory; next, practical management; next, utilization of the products of the bee, showing how honey is used as a food, in medicine, in fancy cookery, honey wines, and vinegar; also wax-refining and usage. Next comes apiculture in general, followed by a complete course in the practice of bee-keeping, which includes making foundation and hives. The students

are taken to see apiaries in various places. There are 258 bee societies, with 9890 members, who receive subsidies to the amount of 21,780 francs from the state. Many of these societies are federated into 9 sections. There is a central syndicate with headquarters at Brussels. They have a selection of 29 bee-books for study, 24 in the French language and 5 in Flemish. They have 5 bee journals, all in French. The hives in use are Dadant-Blatt, Layens', and Voirnot's. How is this for *little Belgium*?

THE HIVES OF CENTRAL EUROPE.

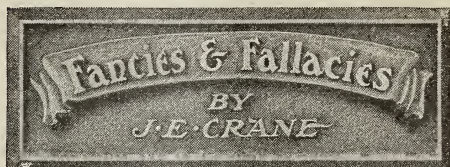
Every nation or race appears to have its own peculiar idea of the eternal fitness of things, for by no other reason can we account for the extraordinary variety of hives now in use in Central Europe, by which is meant Germany, Poland, Austria-Hungary, and Bohemia. There the races of men refuse to blend in one common mass as they do in this country, and we have Croat, Saxon, Czech, Vlach, Hun, Slav, Pole, Jew, Magyar, and all the rest united in an agreement to be disunited, each apparently firmly convinced his way is by far the best. Dr. Dzierzon, owing to his commanding position in the world of bee-keeping, succeeded in a considerable measure in beating down some of this prejudice so far as it applies to bee-keeping. But he was himself a victim of prejudice, for he persistently refused to accept the Langstroth hive in its entirety, though he recognized the value of movable combs in frames. Had he, with his great prestige, advocated with all his vehemence (which was not small) the Langstroth hive pure and simple, it is perfectly safe to say apiculture in Central Europe would have progressed to a point far beyond its present position, and probably be abreast of the best American practice. But the opportunity was lost, and we are waiting to observe developments, for these races generally prefer to follow a leader.

SWEET CLOVER AND LOCUSTS FOR BELGIUM.

The Bee-keepers' Association of Belgium met in Brussels on the 28th of October, under the presidency of Mr. Henry, Professor of Botany in the college at Flobecq. The president is a bee-keeper who has made an exhaustive study of bee pasturage. One proposal which came before the conference was to vote a sum of money to buy 440 lbs. of sweet-clover seed (white) for free distribution among the members in 25-gramme packages. They know where they are at in Belgium.

Professor Henry has an article in *Le Progres Apicole* for November on the locust-trees as honey-producing plants, and it may not be generally known that locusts are much more appreciated in France, Belgium, and Holland than they are in this country, the home of some of them. He calls attention to the fact that the leaves and small twigs of these trees form a food equivalent to alfalfa as a food for sheep, deer, and rabbits. This should be noted by game-preservers. Locust-trees of many species are very

important to bee-keepers the world over, in the United States, in Mexico, where the national "dulce" is the pod of a locust; in Hawaii, where the "algorroba" produces great yields of honey; also in Cuba and Porto Rico; in the French West Indies, where the "quadoo" pods are valuable, and in South America, where the ombu is important. St. John the Baptist lived on locust-pods (husks).



At the annual meeting of the Vermont Bee-keepers' Association one gentleman gave his experience in building up weak colonies by the Alexander plan of setting the weak colony over a strong one, and pronounced the method a great success. It would seem that the art of bee-keeping was never advancing so rapidly as at the present time.

Mention has been made in one or two numbers of GLEANINGS of the high price of honey in England. We have taken some pains to get quotations from there, if we might know the truth of such high prices; but quotations are only three to six pence a pound. Meanwhile some one has been selling honey in Chicago for 50 cents a pound—two better than in England. A few days ago a gentleman told me that his own honey was retailing in New York, Brooklyn District, for 30 cts. a pound. It looks hopeful.

What do you mean, Mr. Editor, when you say, page 18, "Even the doctors must show what they put into their medicine when they give it to a patient"? Does this mean that their prescriptions must all be correctly labeled? I have found by inquiry at a drug-store that patent-medicine men are not compelled to divulge how or of what their medicine is composed, and print it on the label. They give the government their formula, and then are required to stick to it, while those who take their medicine remain in blissful ignorance of what they are swallowing.

In Mr. Holtermann's interesting notes from Canada he states that, within a circle of two miles, and in the city of Brantford, he counted up over 1000 colonies of bees. Supposing they fly two miles on every side beyond this circle, this would make 1000 colonies occupying about 27 square miles, or not far from 37 colonies per square mile. Presumably the bees, many of them, fly more than two miles; but then he tells us that there are quite a few bees kept outside

of this circle, which would balance up that. It would be interesting to know the sources of honey within this circle. I believe many more bees might be kept together than at present with care in spring and fall.

Mr. Holtermann's drastic method of treating those engaged in adulterating honey would seem to be pretty effectual. He can not help giving the small-hive men a little rap in closing; but I begin to think he is about right on the subject, especially for those engaged in the production of extracted honey. I have had only two seasons' experience in extracting on a large scale, and have much to learn. One thing has impressed me strongly, and that is, it is a mistake to use queen-excluders between the first and second stories, as such hives have been as ready to swarm as those producing section honey.

Prof. Bigelow's article in a December number calls for a little attention. I believe, as he says, that the producers of honey put up their goods in less attractive packages than any other goods in grocery stores. It is very hard for one who produces a few hundred or a few thousand pounds to believe that a little more spent in fancy cartons and cases will more than come back to him in higher prices for his honey, besides increased sales; and that whatever increases the demand has a strong tendency to raise the price of the product. I should not be surprised if some of our most important improvements in future would be along these lines.

H. H. Root's two articles on making beeswax are, I believe, the best and most exhaustive of anything before published. I have been using for several years a home-made press after the Hatch-Gemmil pattern, and have been getting so much wax, or so much more than formerly, that I have had a very satisfied feeling that I was doing the wax-making all right; and now to be told by a youngster that I am still losing a tenth of my wax is rather humiliating, and still more so when I remember the hundreds of pounds that have gone to waste in the past because we didn't know enough to get it out. And once more let me commend his article in that he seems oblivious to the fact that the A. I. Root Co. is selling the German steam-presses, and gives the unheated press credit for all it is worth.

Some one in a back number of GLEANINGS tells how he is able to get foundation in full frames drawn out. This has been a vexatious job with me. I have, as a rule, found it difficult to hive a new swarm on foundation, and have them go to work contentedly. If I gave some full combs and some foundation, the foundation was apt to be drawn out unevenly. If I shook a swarm on to foundation they would many times desert the hive altogether, or sulk for a day or two in the best of the season. As a result of these

experiences I have for quite a number of years used but little foundation in the brood-chamber, but, instead, old combs, carrying them over from year to year. During 1905 we used a large number of old combs for extracting, and, besides, increased the number of our colonies to a considerable extent, so that the beginning of the season of 1906 found us with a large stock of bees with comparatively few old combs. What should we do for combs to hive or shake our swarms on, seemed an all-important question for a time. This was the way I solved it: I prepared quite a large number of eight-frame supers, filling them with eight or nine frames of foundation, placing them over brood-chambers without any queen-excluder just before clover opened. It was surprising to see how quickly these frames of foundation would be drawn out—yes, and filled with honey too. Very few of these contained brood, the queen preferring to lay her eggs in the old combs in the brood-chamber. Not having any queen-excluder or other obstruction between the brood-chamber and frames of foundation above, the bees accepted the foundation and drew it out and filled it with honey before they would have done nearly as much in sections; and, what is more, the combs thus drawn out were about as true and even as so many boards. From many hives thus treated I removed one set of frames, when the foundation was drawn and replaced with another. Some of them would draw out three sets before preparing to swarm.

My right-hand man protested that it was poor policy to keep strong colonies building large frames of comb when they should be filling their sections; but when, in the latter part of June, I shook the bees from their brood-combs and gave them a full set of these new clean combs well filled with honey, and two clamps of sections, and he saw how quickly they were filled with the whitest combs, he had no fault to find.

All in all this has proved the most satisfactory way of getting new combs from foundation I have ever tried or seen recommend.



We note with pleasure the appearance of the *Commonwealth Bee-keeper*, published in Melbourne, Australia. This is the official organ of the Victorian Apiarists' Association, and is edited by an expert bee-keeper. W. L. Davey, who evidently understands the duties of the editorial chair, for the Nov. 15th issue, which is before us, contains some bright original matter that is a pleasure to read. At present this paper is bound up

with and forms a part of *The Fruit World*, but we believe it is the publisher's intention to issue it separately as soon as possible. Our Australian friends are up-to-date in their bee-keeping methods; and as they use liberally American hives and other bee inventions, the apicultural literature which they issue is likely to be very interesting and instructive. It looks to us as though the *Commonwealth Bee-keeper* was a very healthy child, and would live to be a valuable educator, monitor, and friend to the bee-keepers of the Southern hemisphere.

I have already quoted freely from the writings of Mr. Isaac Hopkins, in his Bulletin No. 5, published by the government of New Zealand. The ability of Mr. H. in his position as bee-master renders any apology unnecessary for referring to his works. We all know that some friction has been produced at times between farmers and bee-men. A farmer is supposed to ask, "Granting that the visits of bees may be serviceable to me in the fertilization of my fruit or clover, how will you prove that I am not obliged to pay too high a price for such services?" The question has, of course, been answered, but here is an answer that is worthy of the traditional "paste in the hat," etc.

For the answer to such a question one must fall back upon the researches of the agricultural chemist, which will furnish satisfactory evidence to establish the two following facts: First, that saccharine matter, even when assimilated and retained within the body of a plant, is not one of secretions of vegetable life which can in any way tend to exhaust the soil, being made up of constituents which are furnished everywhere in superabundance by the atmosphere and rainwater, and not containing any of the mineral or organic substances supplied by the soil or by the manures used in agriculture; and, secondly, in the form in which it is appropriated by bees, either from the nectaries of flowers or as honey-dew from the leaves, it no longer constitutes a part of the plant, but is, in fact, an excrement thrown off as superfluous, which, if not collected by the bee and by its means made available for the use of man, would either be devoured by other insects which do not store honey, or be resolved into its original elements and dissipated in air.

The best authorities in the world are then cited as proof of the above. Mr. Hopkins says that saccharine matter, once it is secreted by the plant and separated from it, is useless even as a manure.

What, then, is the primary object of nectar—to make honey for human food or for a still higher purpose? Mr. H. says:

The secretion of saccharine matter in the nectaries of flowers is shown to be one of the normal functions of the plant, taking place at the season when it is desirable to attract the visits of insects for the purposes of fertilization. It may, then, be fairly asserted that the insect, when it carries off the honey from any blossom it has visited, is merely taking with it the fee or reward provided by nature for that special service.

Sometimes the secretion of nectar is abnormal. Langlois is quoted as saying that in 1842 the air was so dry that the leaves of a linden-tree became covered with a thick sweet liquid in such quantities that for several hours of the day it ran off the leaves like rain. I think G. M. Doolittle once said he had heard drops of nectar from a basswood-tree. Well, that simply shows that

nectar is a substance which vegetation tries to get rid of as an excrement, and that it is of no further use to the world unless gathered by bees and made into honey.

I hope soon to make one more quotation from this bulletin as to how much grazing stock lose when bees take the nectar from the plants in pastures. As time passes, we realize more and more that honey is a work of secondary importance so far as bees are concerned, and that the cross-fertilization of blossoms is the primary object of their creation.



BEE-KEEPING AS A BUSINESS.

The Importance of Being Fitted for It; Timely Advice to Beginners who are Choosing an Occupation; Specializing; its Advantages.

BY E. W. ALEXANDER.

When our attention is called to some new line of business, usually our first thoughts are, "How much money can I make out of it?" or, "How many dollars can be made annually clear of all expenses from a given amount of capital invested?" While I will admit that these are questions of much importance—questions worthy of due consideration—there is still one question which is of paramount importance above all others, which, I am sorry to say, we seldom think of. That is, "Am I naturally qualified for that line of business? If so, then I have the principal requirement to success; if not, then no amount of study or hard labor can fully take the place of my inability to fulfill its requirements." Oh how many of us spend our whole lives like water seeking its level, and never find the business that God fitted us best to follow! My young friend, if you have any thoughts of taking up bee-keeping as a business, then think this subject over carefully before you invest much money. My advice would be to work one summer, at least, for some successful honey-producer—one who would take pains to teach you all he could in regard to rearing queens, forming nuclei, increasing colonies, wintering, and producing honey—yes, and a thousand and one little things which only experience can teach. In this way you could be earning your board and fair wages while learning your business.

In regard to the amount of money that can be made from bee-keeping, it is like all other rural pursuits—it depends to a great extent on the season. It is no get-rich-quick busi-

ness; still, if rightly followed, it will give as good returns one year with another as any business of a rural nature, considering the amount of capital invested and labor required. About five dollars per colony, spring count, clear of all expenses, is a moderate estimate of the profit from the business—that is, if run wholly for the production of honey without any special care to see what might be accomplished; but if run by an expert on high-grade methods, then 15 or 20 dollars per colony can frequently be made.

Here is where the specialist has a great advantage over the man who divides his capital and time into two or more channels. These men soon find that they have twice or three times the trouble to contend with, and only a third or a half the capital to use in making a success of any one of the several lines they have taken up; but the lack of necessary capital is only a small factor, for that can be got at the bank. But the necessary intellect, business capacity, and experience can not be borrowed, and without these elements to success there is only one alternative, and that is and always has been simply failure.

Then there is another thing to take into consideration. It is pleasant to have a paying business that requires your time only about half of the year, and that the pleasant part, when you can be outdoors and enjoy all the pleasures of nature's spring and summer. With me it is a real pleasure to breathe free air unsoiled by either bell or whistle calling me to labor.

I will now take it for granted that you have spent one or two seasons in learning all that you could during that time from some competent person, and you still want to follow bee-keeping. I can not advise you to go slow, as some do. That "go slow" is a blight on any man. First be sure that you are right, then go ahead with willing hands and a good stock of perseverance ever ready to overcome the unexpected troubles as you meet them. Make up your mind from the first to take good bee literature; have good bees; use good tools and hives, and then produce good honey. Take pride in your business. If you have taken up queen-rearing, forming nuclei for sale, or increasing your colonies for sale, or producing comb or extracted honey, don't forget to look well to quality. Then advertise and let the public know what you have, and you will in a short time not only surprise your friends but yourself with your success. You now have a clear track and a light grade compared with what some of us older men had fifty years ago.* We then had a hard time of it—no bee journals, no Italian bees, no comb foundation, no honey-extractors, no bee-smokers, and no market for the little honey we secured.

How different now, with our large markets established, where our honey is annually sought for, either in small lots or by the carload, and with our new inventions and improved methods enabling us to produce five times the amount per colony we did then! To me bee-keeping now seems like quite a

good business. Still, I never advise one to take it up, not even my own sons, for I have always thought that, when it comes to choosing a life business, each one should choose for himself. While it is true that man to a great extent makes his circumstances, still it is also true that circumstances to a great extent make the man.

I am well acquainted with a man who was born on a farm, and worked hard on it for several years after he was married. He was temperate and of excellent habits, working early and late; but still his farm life was a perfect failure. After toiling in close circumstances for several years his wife's friends got him a situation in New York city. Then the scale turned. He struck a place that God had fitted him for, and for the past thirteen years he has had a net income of over twenty thousand dollars a year. I speak of this case to show that many of us are trying to make a success of some business to which we are not at all adapted; also to show the importance of trying hard while young to start right.

You should look upon your business as your bank; and whenever you can add a dollar to it, do so, and it will return in due time many fold. Take pride in having a good apiary, and remember there is far more in the man than in the business. If the bee-keeper in the future will take our leading bee journals he can, through their advice, shun so many troubles that we older men had to bear that it is almost like another business—not but that it is still subject to many discouraging conditions; and our inability to have any control over the season is and always will be its worst feature. But all lines of business have some troubles with which to contend. When the farmer loses his stock it is hard and costly to replace, and it often takes some time to do it; or when his crops are ruined by untimely frosts or protracted drouths the loss is hard to bear and overcome. But when the bee-keeper loses a large per cent of his bees he still has the hives and combs left; and if he has some good colonies he can soon have his original number again with but little expense, and usually secure some surplus besides.

Here is one great advantage our business has over many others. Taking our bees safely through long cold winters and very changeable spring weather, with small loss, has been a hard problem to solve; but this part of the business is now so much better understood by nearly all bee-keepers than it was a few years ago that we feel much encouraged in eventually overcoming other troubles as we have this.

Each year brings some new methods perfected whereby our business is placed on a more reliable basis than it formerly was, enabling us to produce honey cheaper than we ever could before. Still, we have some dark clouds of losses and disappointments hovering over us. I have seen many through which it was almost impossible to see a ray of silver lining; but as the mariner's compass will guide the ship safely through ocean

storms, so will continual perseverance lead you on and on through these trying hours until a clear unclouded sunset welcomes you to a land of rest.

Delanson, N. Y.

[The suggestions that our correspondent has made are, as a whole, good. There is one point, however, on which a few of our subscribers might take issue; namely, the profits in the honey business. Mr. Alexander estimates that, one year with another, there will be about \$5.00 per colony, spring count, clear of all expenses, and he believes this will be a "moderate estimate." In Mr. A.'s locality this would not be far from right; but in the average locality the returns would be somewhat less than that. Mr. W. L. Coggs, one of the most extensive bee-keepers in the world, once told us that, if he made on an average \$2.00 per colony, from all his bees, he would be well satisfied, and he had some apiaries in places where buckwheat is one of the main crops.]

But a large number of colonies in a locality will not begin to give the average net returns of a small number. A bee-keeper located where there are no other bees, with 25 or 50 colonies, if he devoted them to the production of fancy comb honey, might get on an average \$7.50 to \$10.00 per colony; yes, he might even double these figures if he had a good market.

In our A B C of Bee Culture, under the head of "Profits in Bees," we estimate that, in a locality not overstocked, the annual income per colony clear of expenses will be \$3.50. If a feeding in the fall were required, it would make it approximately 50 cents less. Much will depend on whether the honey is sold at retail or to jobbers in the cities. Many a small bee-keeper works up a small trade that comes to the house for the honey, paying for it retail prices. In such cases the profits are necessarily larger than when the honey is sold in a lump in the city.—ED.]

WET BEE-CELLARS.

Another Case where Bees Wintered Almost Without Loss in a Wet Cellar; Ventilation Necessary.

BY ERNEST W. FOX.

Mr. Alexander's article on cellar wintering of bees, page 27, interests me very much, as I have also made a success of wintering bees in a wet cellar. My cellar is made especially for bees, in a steep bank, covered entirely with dirt. It has always been so damp that the dirt on the bottom is gummy. Two years ago this winter we had a very heavy snowfall, and consequently there was no frost in the ground to speak of, so almost all the water from the snow soaked into the ground.

I hadn't been in my cellar for two weeks. During that time it had been so warm that nearly all the snow was gone. I was very anxious to see what condition the bees were

in. To my great surprise I found about four inches of water on the cellar floor. I dug a trench through in under the doors and drained the water out as best I could. I feared bad results, as it was nearly a month after discovering the water before I dared to take the bees out. But, on the contrary, it seemed to be a benefit. They were more quiet after the water ran in than they had been for some time before. Bear in mind, though, the temperature did not go below 45 degrees. I lost just two colonies out of 83 that winter. The rest all came out in fine condition.

A year ago this winter my cellar was reasonably dry at the time of setting the bees in; but there came several heavy rainfalls just after putting the bees in. There being no frost in the ground to speak of, scarcely any water ran off, so it soaked into the cellar through the side wall again.

Well, I thought I should get it in the neck this time, sure. I opened up the trench through in under the door, and most of the water drained out. The cellar was wet all winter. I had to keep this ditch open all winter to keep the temperature down in the cellar. There was a direct draft of air through the cellar all the time, so you see there was no chance for foul air. The temperature ranged from 46 to 54 degrees. My bees never came out in better condition. I lost only one colony out of 117, and this one had but very few bees when I set them in, and I am sure they were queenless. Part of the hives I have standing on bottom-boards, just as they are on the summer stands—a piece of burlap or old carpet over the frames, the cover removed entirely. The rest I leave the cover on and raise the front of the hive from bottom-board on to one-inch blocks. I like this way of placing the hives in the cellar the best of any I have found yet. I have been in several bee-cellars in this neighborhood. They are all dryer than mine, and I have had better success in wintering than most of them. Almost every season I have wintered a few colonies in the cellar under house. I have 34 colonies in this cellar this winter. It is what I call a really dry cellar. The bees winter well; but they seem to come out stronger and in better condition, every thing considered, from the wet cellar. I don't care if the cellar is wet if it is warm enough to be well ventilated, allowing an inlet as well as an outlet of air. I have 135 colonies in the cellars, in fine condition.

Hillsboro, Wis., Jan. 11.

[Our correspondent mentions one very important thing, namely, that the temperature did not go below 45 degrees nor above 54—otherwise his losses would have been severe. On this question of temperature hinges the whole matter of successful wintering. A cellar reeking with dampness at a low temperature will kill bees at a fearful rate. One with a temperature of 45 degrees average, with a maximum of 50 and a minimum of 40, will winter bees whether wet or dry, other things being equal; but we should very much prefer to have it too dry than too wet.—ED.]

OUTDOOR WINTERING AT THE HOME OF THE HONEY-BEES.

How to Pack; Taking Birdseye Photos of the Apiary and Lumber-sheds.

BY E. R. ROOT.

I have said considerable about *indoor* wintering as practiced here at Medina, and but very little, comparatively, about the outdoor method employed here. Like Mr. Doolittle, we use the two plans; for during a very cold winter the bees inside seem to fare better than those outside; but during an open season, such as we have been having up till within the last few days, the outdoor colonies seem to do better.

There is one thing we have never determined yet, and that is this: Granted that the bees outdoors consume more stores from month to month, is it or is it not true that this extra consumption produces stronger and more vigorous colonies for the harvest? This question has been raised time and again, but so far I believe there is no definite data that furnish absolute proof one way or the other. If we could be sure that the indoor colonies were just as good in the spring, with a consumption of stores of only one-half, we will say, of those outdoors—I say if we could be *sure*, we would abandon the outdoor method entirely, and we could well afford to, because the sugar or natural stores sufficient to take care of 600 or 700 colonies in a winter runs up into a big sum of money. If this amount could be cut in two it would be worth considering. I know this: That our outdoor bees packed according to our regular method come out in the spring with a loss on an average not to exceed three per cent; but every year we lose more than that because we are constantly trying different methods of outdoor wintering with the view of determining whether even the three per cent can be reduced. If it were not for the purpose of learning something we would cease our experimenting, and be content to continue on in the good old way by using double-walled hives packed with chaff or planer-shavings in the manner shown in the adjoining illustration.

Right after a snowstorm this winter I took a number of snap-shots from different points, illustrating our home apiary reposing in its cover of snow, and surrounded on all sides by a windbreak of evergreens and factory buildings. You see in these views something like 300 colonies packed for winter. At the outyards the bees are put up in precisely the same way. Briefly stated, what is our ideal method of wintering? A double-walled chaff hive, which is sold by all manufacturers, the space between the walls filled with planer-shavings, chaff, or any other porous material; an entrance contracted from $\frac{1}{4} \times 12$ inches for summer to $8 \times \frac{1}{4}$ inch, by means of a suitable-sized stick with a slot cut on one side.

Instead of using a Hill device, a piece of burlap, and a loose cushion, as formerly, we now put on a thin board cover, or what is called in the bee-supply catalogs a "super

cover." This the bees hermetically seal down. Between this and the frames there will be a bee-space of $\frac{1}{8}$ inch, so the bees can pass readily over the top. Over the super cover is placed a wooden tray made of $\frac{1}{2}$ lumber 5 inches deep, with a bottom of burlap tacked on the under side. Into this is poured planer-shavings, chaff, or any other porous material. The burlap bottom is nailed on loose enough so that the sides of the tray fit down snugly over the raised edge of the water-table of the hive. A seven-inch cover telescopes over this tray, the edges projecting down below the before-mentioned water-table and the other portions of the hive.

The illustration in the upper left-hand corner gives a closer view of how the hives are prepared.

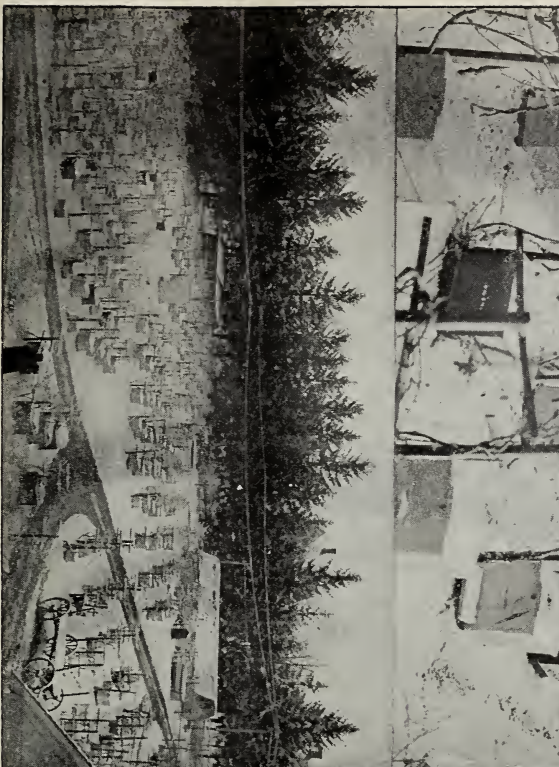
In the end of the telescope cover will be seen an auger-hole. Some years ago, when we used the Hill device and chaff cushion, we considered these ventilating-holes a necessity, in order that the moisture accumulating from the bees could dry out; but in later years, since we have adopted the sealed cover and the chaff tray, we consider these holes not only useless but detrimental. We soon discovered that a driving rain would beat through these holes, wetting down the packing material. We now nail over them a little strip of section, closing up the hole entirely.

The hives all sit up on hive-stands with an alighting-board attached to the entrance. The arrangement would be more perfect if the board reached clear down to the ground, for many bees get too much chilled to fly into the entrance, alight near the hive, and, unable to take wing again, perish, so that the illustration in the upper left-hand corner in this respect does not quite show the ideal arrangement.

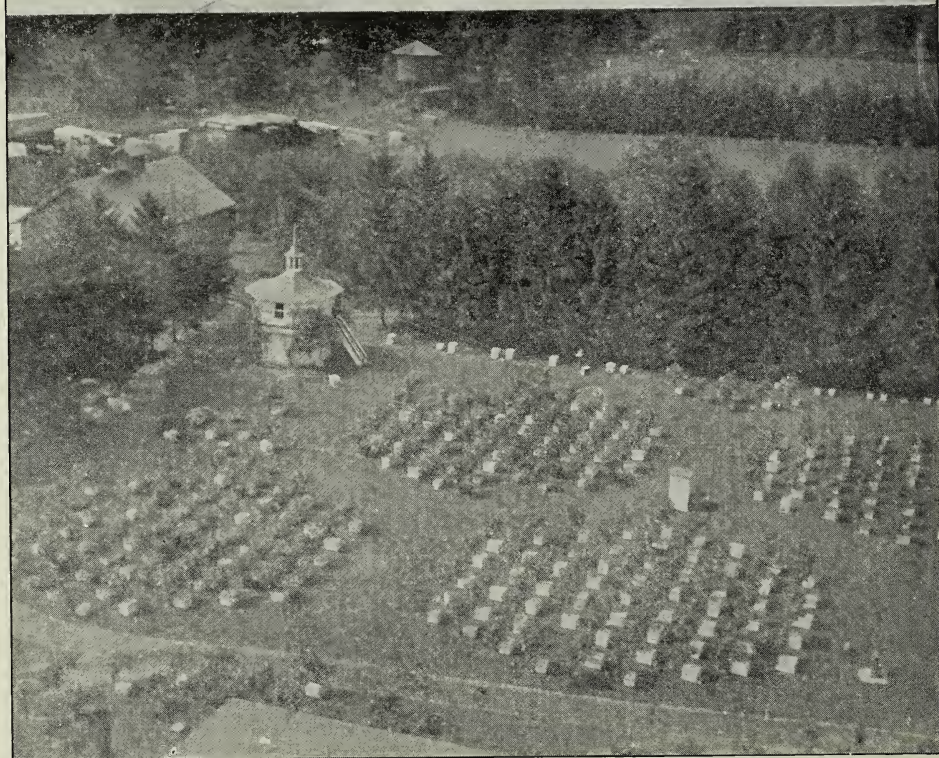
The lower view on the left is looking from the southeast. The right-hand lower view is from the northeast.

By looking very carefully in the center of the yard you will see a small structure that we call our smoker-house. It has a little cupboard door on one side, and on a shelf two-thirds the way up are several smokers, and in the lower part the fuel, consisting of greasy waste in a bushel basket. The low oblong building is the automobile-house, the same being located right over a steam-pipe which carries heat over to A. I. Root's dwelling. It is in this auto-house that we keep the machine that makes the trips to the out-yards.

Thus far I have described the ideal method for outdoor wintering that gives such excellent results in wintering. It is practically the same we have used for years, with this difference: We have abandoned the old absorbing cushion, which we found too often would soak with moisture from the bees, and freeze, leaving, as it were, a big cake of ice on top of the colony. We soon discovered that the sealed cover, that would shut all dampness within the hive, leaving the packing-material above perfectly dry, is far better. The moisture, as fast as it accumulates,



WINTER SCENES FROM DIFFERENT POINTS OF THE COMPASS, IN THE APIARY AT THE HOME OF THE HONEY-BEES.



BIRDSEYE VIEW OF A PART OF OUR HOME APIARY IN 1906, SHOWING THE HEXAGONAL DESIGN AND THE WALL OF EVERGREENS AS PLANNED BY A. I. ROOT 30 YEARS AGO.



VIEW OF THE COVERED LUMBER-YARD CONTAINING THE MATERIAL FOR BEE-KEEPERS' SUPPLIES, AS SEEN FROM THE TOP OF THE SMOKE-STACK.

will run down the sides of the hive, and finally escape at the entrance. It was for this reason that any obstruction at the entrance was decidedly injurious. A year or so ago, you will remember, I told how we were covering the entrances with loose hay, thinking thereby to shut off the chilling blast. Theoretically the plan was all right; but Doolittle early predicted disaster to all colonies so treated, and he was right; so we now recommend leaving the entrance unobstructed, but contracting to the size already given. In this connection it is proper to state that it is very important to keep them clear by raking out the dead bees from time to time.

In the upper right-hand corner will be seen a view of some colonies in single-walled hives packed in paper cases. These are made of rubberoid roofing, folded up in the form of a cap, but of sufficient size to leave folds of newspaper between the top and sides of the hive and the cap. Under the newspaper is a super-cover which the bees are permitted to seal down early in the season. I see no reason why this arrangement shall not give good results. But the making of these cases—what a job! Our men aver that the cutting, folding, and riveting the folds of the stiff roofing, make such cases as expensive as those of wood, with the disadvantage that, when made, they are so flimsy that they would hardly answer for more than one season's use.

THE HEXAGONAL ARRANGEMENT OF THE HIVES.

While I am showing the views of the bee-yard in winter, perhaps I should stop to give the reader the general scheme of the arrangement of the hives. Our older readers will remember that A. I. Root, when he originally laid out this home yard, conceived the idea of making separate apiaries with driveways all around them. Each apiary he plotted out in the form of a hexagon, in imitation of the comb of the bee. All of these hexagons with driveways around them were arranged in the form of one large circle, making up one large bee-yard comprising several smaller ones, making a total aggregate of 500 colonies. In front of each hive, on the south side, he placed a trellis and a grapevine, to give the requisite shade in summer. We have never been able to show this hexagonal effect clearly, since it was carried out; for when one is on the ground the form of the separate apiaries does not appear. But during the last summer the big smoke-stack of our plant required some enlarging. The inner lining was taken out, and the stack was raised some 35 feet, making a total height above the ground of 125 feet. Just as the work was completed I had the men haul me up to the top of the stack, where I took a number of snap-shots looking down over the bee-yard. A few of these pictures are given in the next two pages. The lower view is one that shows the hexagonal form very distinctly; the smoker-house, and the old house-apiary that was built by A. I. Root just about 30 years ago; but I shall refer to

this later. The upper view shows how the bee-yard joins on to the lumber-yard and buildings with the barn in the background. The two other views look down on our lumber-shed, where there are sometimes stored or piled up solid something like \$75,000 worth of lumber. One can form some idea of the size of these sheds by noting the flat car and the men piling lumber. These sheds are not all shown here, as the range of the camera was not sufficient to take them in.

THE FIRST BUILDING BUILT BY A. I. ROOT IN THE INTEREST OF BEES.

There is one very interesting building, however, and it is situated just in range of the top of the small smoke-stack, shown in the two views—not the one from which the picture was taken. This is a plain frame structure with gable roof, and is the first building that A. I. Root ever erected for bees. It is double-walled, the lining being packed with sawdust. It was in this building in the late 60's and early 70's that he conducted his experiments in indoor wintering. The results of all this were given in a very interesting series of articles in GLEANINGS along about 1873. The enthusiasm that he put in this work was not unlike the enthusiasm he evinces in his chicken-raising, given in *Our Homes* in last issue. Well do I remember those early experiments. I can see this building, and the bees in it, as though it were yesterday.

The Root Co., consequently, considers this a rather interesting exhibit, because it was the nucleus of what now covers many acres of ground, and in a way shows the progress of the bee-keeping industry from the time of fathers Langstroth and Quinby. During those days a single carload of honey dumped in New York broke the market completely; but nowadays a trainload of honey with an aggregate length of 75 miles in length, without a break, said aggregate distributed over the selling season, does not appreciably affect the honey market.

BASSWOOD LUMBER FOR SECTION-MAKING.

But I have digressed. Let us go back to the pictures again. We soon found that, in order to make perfect sections, the basswood lumber, when it reached the right age of cure, should be piled up under sheds where the sunshine and the rain and the snow would not affect it. When basswood lumber reaches the right dryness, it begins to deteriorate very rapidly unless protected, hence the sheds. The boards are now loaded on to cars, clean and dry, no matter what the weather, rainy or snowy, and run directly inside of the factory building, and worked up into sections.

I omitted to state that the upper picture, showing a corner of the bee-yard, was a little dim, owing to the fact that a slight breeze was blowing at the time; yet this was sufficient to make that stack, 125 feet tall, with an internal diameter of about 5 feet, sway back and forth. There was a sort of sensation that the thing was going to topple over. It would have been too bad to spoil these pictures; but my own judgment, not my feel-

ing, mind you, showed me very clearly that, if this stack was strong enough to stand a sixty-mile gale (and it has stood several of them) this light breeze would not be sufficient to blow it over. Because the chimney swayed back and forth in the slight breeze, one view of the apiary is a little dim. As it was, I was compelled to wait for each picture until the wind stopped entirely, so great was the swaying of the stack. At some future time I may give you a snap-shot looking down on the other buildings—those where the manufacturing is done.

RAMBLER'S MONUMENT.

A View of the Last Resting-place of One whom our Readers Learned to Love.

BY DAVID HALL.

When I was getting John H. Martin's monument, Mr. E. R. Root requested a photograph of it. Perhaps you will think this is a late day for it. Two years ago last summer

the monument was erected. I waited before having a picture taken, to have the lot graded and finished.

One face of the monument bears his inscription and his wife's. The other face has his father's and mother's name.

My wife, who was a cousin of Mr. Martin, suggested that some honey-bees be carved in the foliage toward the top. I don't know that you can distinguish them in the picture, but they show plainly on the granite. John helped lay out this cemetery, and before leaving for California he removed the bodies of his wife and parents from another cemetery to the lot he had purchased, and laid the foundation for a monument. He is there with all his own family, and many of his kindred in near-by graves.

The monument is of dark Barre granite; whole height 5 ft. 10 in.; width, 3 ft. 8 inches; thickness, 1 ft. 8 in.

Hartford, Wash. Co., N. Y.

[Perhaps we should explain for the benefit of our newer readers that John H. Martin



JOHN H. MARTIN'S GRAVE, AT HARTFORD, N. Y.

The older readers will remember Mr. Martin as "Rambler," who wrote for GLEANINGS so many years.

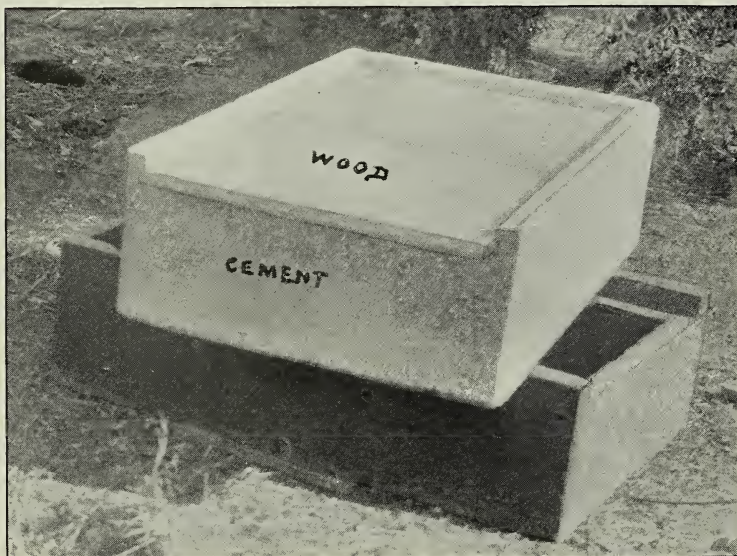
wrote for many years for these columns under the *nom de plume* of Rambler. He first began his writings as a traveling correspondent in the vicinity of his old home. His work pleased so well that we sent him across the country to California, then up into Oregon and finally into Cuba. From all of these points he sent in regular notes of travel illustrated by his pen and camera. Perhaps the writings of no correspondent we ever had were more eagerly read than his. He was our "funny" man, and yet at the same time with all his fun-making he picked up and gave to our readers many a valuable idea which, with the aid of his camera, he placed before our readers. When he died in Cuba, some three or four years ago, he was sincerely mourned as a dear friend. His wife died early, as will be seen by the inscription on the stone; but during the years of his travels alone for this journal he continually mourned her loss. Notwithstanding that he made the bee-keeping world laugh, and laugh heartily, his life was one of sadness to those of us who knew him best. We are glad to present a view of the final resting-place of all that was mortal; but his soul has fled to that home that knows no sorrow, to meet that companion of his earlier life.—Ed.]

CEMENT HIVE-STANDS WITH WOODEN FLOOR-BOARDS.

BY F. W. KLEINEGGER.

The engraving shows my cement hive-bottoms with board floors which I have been using this summer. Any one can understand the construction, so no description is needed.

Derby, Kan., Dec. 25.



A CEMENT HIVE-FOUNDATION WITH WOODEN FLOOR-BOARDS.

[Your scheme of cement hive-stands is all right, except that such stands would be rather expensive. However, it would probably be economical in the long run, if one could be sure that he is going to stay in the bee business for thirty or forty years, and could also be sure that, during all that time, he would never change the style of his hive. The expense could be lessened, however, by making it of less height and making the side walls of it thinner.

Aside from the matter of expense would be the lack of portability. This alone would be a very serious objection to it, for in practice nowadays it becomes necessary to move hives frequently. A hive with this stand could not be moved without moving the whole thing. Would it not be better to make a cement hive-stand pure and simple, without the floor-board, and then put a regular hive-bottom on this stand? The hives could then be readily moved, leaving the hive-stands as a permanent fixture.—Eb.]

FULL SHEETS OF FOUNDATION TO AVOID DRONE COMB.

The Man who ought to Read Bee-papers.

BY J. O. SHEARMAN.

I noticed that most of the writers on California looked up the larger bee-keepers and big stories that looked well on paper, but hardly touched on the condition of bee-keepers here of the smaller class. say of 100 colonies or under—those who *ought* to take bee-papers and don't—many of them not up to modern methods at all, and not working their bees in their own interests. Some of them do not know how, and others do

not have the means. Bees worked in that slipshod way never pay full returns anywhere. For instance, I saw an old gentleman in Pomona, at his house, putting narrow strips of foundation in the brood-frames. He was getting ready before swarming time. I asked him, "Mr. P., won't your bees fill up most of those frames with drone comb?"

"Oh, no! I guess not; that is the way we generally do here, and they always get

along pretty well — at least so far as I have observed.”

I said, “I think they will put in enough drone comb to take off 25 per cent from your profits for this season. I should like to look into some of the supers already put on, and see how they are doing.”

“All right,” said he, “you may.”

So as we had a trade on hand we soon agreed to go to his bee-ranch and look them over. We were soon on the way, and held a bee convention of two all of the way there — a drive of about five miles.

Now, it is the way here to keep the bees away from home in some little hollow or canyon, or even on a sidehill, in some place away from where teams pass, and where they won't bother stock, and right in the hot sunshine, generally. Sometimes they are left there the year round; sometimes moved in the spring, April or May, to catch the flow of orange honey, or possibly moved again the last of May to a sage location, and perhaps again to the alfalfa-fields, though most bee-men claim the alfalfa is not of much use to bees, as the custom here is to cut it before it blossoms. But, to continue my story.

We soon had the horse put out, and Mr. P. picked for one of his best colonies, opened up, and drew forth a nice new comb, solid drone brood, then another, and, in short, most of his best colonies had a super on nearly half full of drone comb with brood in it.

“Well, Mr. P., what do you think of your crop of drones?”

“I think I'll run my bees a lot different another year. I'll use more foundation and put on queen-excluders, as you said coming on the road.”

Well, we made a trade, but that is another story. I told my brother George about it, and he did not advocate using “starters” in brood-frames any more as he had been doing “to do as they do here.”

He said, “Only the mossbacks do so.” I answered him, and got him to ask Mr. Andrews a question the next time he went to Carona. Now, Mr. A. is president of the Los Angeles Society. He had 700 colonies, and produced 40 tons of extracted honey last year. I had explained to George that Mr. A. could not do as well as that if he used only starters in the surplus chambers; so when he put the question to Mr. A., “Do you use full sheets of foundation in your brood-frames?” “*Always*,” answered Mr. Andrews emphatically. I had met Mr. Andrews in February at his home, and knew how he stood. Well, that settled it. So when we bought more bees we got more foundation.

Pomona, Cal.

A CHIP OF THE OLD BLOCK.

BY C. B. PHILLIPS.

The young bee-keeper who is here shown is certainly as much interested in the profession as some who are much older in experi-

ence, even though he does not do his own manipulating. He is Charles B. Phillips, Jr., who is 15 months old, and “a chip of the old block.”

Crafton, Pa., Dec. 28.



CHAS. B. PHILLIPS, JR., AT WORK AMONG HIS BEES.

[GLEANINGS offers its congratulations to Charles B. Phillips, Jr.; and if he continues to like bees we should be glad to make him a present of a bee-smoker when he is old enough to open bee-hives. We can scarcely say that he is too small to handle a smoker,

for he seems to be quite an adept at it already.—Ed.]

LOWER FREIGHT RATES ON HONEY.

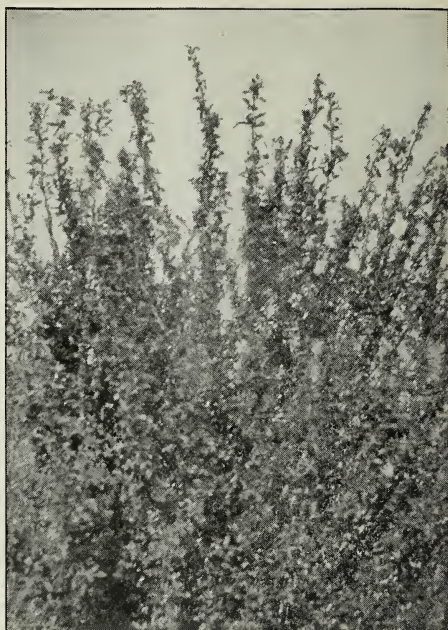
How to Prepare the Honey for Shipment; New or Second-hand Packages; Importance of Bottom Starters; Some Good Suggestions from a Honey-buyer.

BY FRED W. MUTH.

At the annual convention of the National Bee-keepers' Association held at San Antonio, Texas, in November, there was a committee appointed to secure, if possible, lower freight rates on honey. Being one of the committee in question I wish to make an explanation in behalf of the recognized high freight rates, and then point out to bee-keepers the steps that must be taken in order that the committee appointed may be successful.

We are dealers in both comb and extracted honey, and in the course of a year receive many carloads as well as innumerable small shipments. In one year's time we are obliged to enter many claims with the railroad companies, and are subjected to experiences which enable me to write intelligently upon this subject.

I am informed by a railroad official that the Classification Committee determine their classifications on an average, based upon the number of claims and the amount of money expended for damages incurred *en route* in the course of one year; therefore it may be plainly seen that the shippers are responsible for the exorbitant freight charges imposed upon them, and lower rates need not be expected until the losses paid by the transportation companies have reached the very minimum. Consequently we must help our-



"AGERITES" — *BERBERIS TRIFOLIATA*;
YIELDS MUCH POLLEN IN FEBRUARY.

See Bee-keeping in the Southwest, on another page.

selves by learning how to ship our honey. Other industries have done it; why not we? Take, for example, the packages used by the sugar-refineries. They are perfect, as well as those of the coffee-importers, cereal-manufacturers, and others that I could mention. They were compelled to work, and work hard, in order to bring their losses down to the minimum, and soon discovered that it was absolutely necessary to use *perfect packages and nothing else*. They now have the advantage of lower freight rates than the honey-shipper.

In order to accomplish our aim to secure lower rates, we must, without one exception, ship both comb and extracted honey in first-class packages. Brother bee-keeper, if you are raising comb honey for the market, by all means use *bottom* as well as *top starters* in your sections, so that the honey can not break loose at the bottom. This is the first and a very important step to be taken. Furthermore, be sure to use the no-drip shipping-case. Wrap each case in paper, so that it will be kept clean *en route*. Pack six or eight cases into one carrier well supplied with straw in the bottom, and having handles that will extend



IN THE SOUTH—JANUARY. AND A PEACH-TREE IN
"FULL BLOW."

See Bee-keeping in the Southwest, on another page.

from four to six inches beyond the sides of the same. Lastly, do not forget the usual "Handle With Care" placard. Now, if every bee-keeper and shipper of honey will follow the above instructions to the letter that will tend to introduce a method that is both simple and practical, he will not only realize a greater profit in his product, but will also be assisting those who are giving their time and lending their experience to secure lower freight rates for you.

The producers and shippers of carloads of comb honey appreciate the value and advantage of using bottom as well as top starters. For instance, last summer we received two carloads of comb honey from two different shippers. The one car contained 1170 and the other 1350 cases, and in the entire lot there was not one comb broken. These shippers understand their business. On the other hand, we received quite a number of small shipments, with here and there a broken comb, frequently some badly damaged lots, caused by the failure to use bottom starters. These experiences are trying and disgusting; and were the shipper in question subjected to a few of them he would, without a doubt, pay more attention to the manner in which he raises his honey and his mode of packing for shipment. These are the shipments that are responsible for the high rates. Do not misunderstand me; there are many producers and shippers of honey on a small scale who thoroughly understand this part of the work, and we must give the credit that is due them.

A word regarding extracted honey; the railroad companies pay more damage claims on account of poor packages used for extracted honey than for comb honey, and it behooves us to ship our extracted honey in *new* cans, if this style of package is to be used; or if it be barrels, let them be good ones, well coopered, first class in every respect.

The greatest trouble rests with the bee-keeper. He clings entirely too much to second-hand packages, just because he can buy them a little cheaper; whereas, if he were to ship his product in good packages, the freight rates would be comparatively less, and, in the end, his cost for shipping would be a great deal less than at the present time, and there would be no trouble with the railroad companies, nor any unsatisfactory transactions.

Therefore, friends, we must ask you to help, each and every one, if you want us to obtain lower freight rates for you.

Cincinnati, O.

[Some good suggestions are made by Mr. Muth, especially in the matter of preparing honey for market. We regard also as very important the suggestion of using bottom starters. The purpose of this, of course, is to secure a bottom attachment to the combs as well as at the sides and top. Such fastenings will very greatly eliminate the chances of damage to the honey during shipment. Perhaps it might be better yet to use full sheets of foundation—sheets reaching out to

the sides and bottom also. But a good many do not regard this as practical, while some of our correspondents have already tried it and proved it a success. Besides securing well-fastened comb on all four sides of the section, they are able to obtain a much fancier box of honey. When a close-fitting full sheet is fastened on all four sides, a Van Deusen foundation-fastener should be used. A brush dipped in melted wax will give nearly as good results.

Mr. Muth is doubtless correct in stating that the classification committee bases its rates on any commodity by the number of claims that have been filed against such commodity. It is thus very important that we bee-keepers should use proper care so there will be no occasion for filing a claim against a railroad company. While there is no excuse for the careless freight-handlers for breaking honey out of sections, yet we bee-keepers can eliminate this breakage of the bunglers to a very great extent by seeing to it that the combs are attached on all four sides.—Ed.]

THE BRANT CO. DISTRICT CONVENTION.

Some Valuable Hints on Breeding up in the Spring.

BY R. F. HOLTERMANN.

The Brant Co. District Bee-keepers' convention held at the City Hall, Brantford, Jan. 29, 30, 31, was highly successful. The foundation of its unprecedented success was, no doubt, owing to the offer to pay the expenses of a good and well-known bee-keeper, Mr. House, from a distance. Many such men would, no doubt, be willing to go to conventions at considerable distance for the sake of seeing and hearing what can be seen and heard in other sections, and from others on these terms; and by so doing we would draw men and women to our conventions and make better bee-keepers of them, when otherwise they would not come. From the United States we had Mr. and Mrs. S. D. House, Camillus, N. Y.; Messrs. O. L. Herzhiser, Buffalo, N. Y.; W. L. Cogshall, Groton, N. Y.; E. R. Root, Medina, Ohio.

At some future time more may be said about the convention and what was brought forth. The following are notes on the address of Mr. S. D. House, upon "the building-up of colonies for the honey-flow."

He stated that the subject was very important, and had many factors entering into it. The foundation must be laid by the time the bees go into winter quarters. First we want a good queen. During the past half-century many strides have been made in bee-keeping, but not much in the direction of progress could be said to have been made in the breeding of bees. If we bought an Italian queen from its native haunts (Italy) we would probably find the average queen from there the equal of the average Italian queen whose ancestors had for generations been in our own

hands. Breeders there were who had bred for color, and we have golden-colored bees, and they can breed true to this color. If we could do this in one hive why not in another? He did not consider the Italian a bee sufficiently prolific. We should breed in the direction of having more prolific Italians; and if this could not be developed in its purity, then we should mix. The Carniolan bee is a wonderful wax-secreter, and very prolific—ahead of any thing he had seen in other varieties. The queen must be young. In youth, in the queen, we have all the vitality we can ever get. With plenty of good stores, whether it be outside or in winter repositories, we shall be likely to winter the bees well. In his locality he removed bees from the cellar about April 15. They should then at the first opportunity be examined and their true condition ascertained.

Too much stores is almost as bad as the lack of stores, as it reduces the room for a brood-chamber. Where necessary, clean the bottom-board and hive. An ordinary cover is not sufficient protection. There should be a non-conducting cover, and it should telescope deeply so it can be packed.

The queen in a good colony, under proper conditions, should in 15 days occupy with brood all the space bees can cover; and if then we want to spread more we must do something to raise the temperature of the hive.

Bees, according to investigations, in order to produce temperature, when quiet, give three to five inspirations, then remain quiet for three to five minutes; when very active they will increase the inspirations to 160 a minute.

The blood of the bee receives oxygen through cells, and the blood fed with fuel (carbon) produces heat. The temperature of the hive is connected with the respiration and activity of the bees, and activity on the part of the bees causes greater respiration, and this, again, causes a higher temperature. It has been found that the thorax of the bee is of a higher temperature than the abdomen. One pound of honey set out to rob could be made to agitate 100 colonies of bees. Greater heat would enable greater expansion of the brood-nest.

The temperature of the cluster at swarming time is 96 inside, and 66 outside; later in the season the inside temperature is 86 and outside 78 to 80. Activity causes stimulation; and by stimulation we secure greater activity and greater heat. If the stimulation is from outside, bees are sometimes tempted outside; and, owing to changes of weather, bees might be lost. The feeding to agitate the bees should be done inside the hive; and to prevent, by opening the hive, the loss of heat, the feeder should be manipulated from the outside. The feeder should be so small that only a few bees can get at it at a time. The feeding should be done at the close of the day. Low temperature generally prevails at night, and to hold the temperature at night where it was during the day, the feeding should be done at evening; 4 oz. at a time is quite sufficient.

In the course of three or four weeks the bees under such conditions start into fruit bloom with the brood-chamber filled with brood and honey.

As to the hive, we need a large one if we want to breed large colonies of bees; and it is a question as to which is the best hive for brood-rearing.

He used a divisible brood-chamber; if more room was required he gave another section. To prevent swarming he found that three sections in most cases, using part foundation and part drawn comb, gave best results. He prepared his bees in this way for the honey-flow, which opened about June 5. At that time each colony should be hatching 2000 to 3000 bees per day, and we shall then have an enormous colony.

Manipulation now depends upon whether the aim is comb or extracted honey. If extracted, then use a queen-excluder, with supers above; for comb honey, no queen-excluder is used. Swarming can be prevented by the displacement of brood and honey, the queen-excluder being used above the second section of the brood-chamber.

A CONVENTION SIDE-LIGHT ON BREEDING HORSES PROOF AGAINST BEE-STINGS.

Most of the members of the convention drove in a van $2\frac{1}{2}$ miles out of the city to see Mr. Holtermann's bee house, cellar, and bees. On the way out an informal discussion took place on bees and horses, and the action of each in combination. One bee-keeper from Caledonia stated that there were some horses the bees would not sting. Doctor Burt, V. S., a prominent horseman from Simcoe, who is also an extensive bee-keeper, said he knew that. It was a saw-horse or a clothes-horse. The Caledonia bee-keeper said, "No, no! but horses, if they are of certain colors, will not get stung. The bees will leave those colors alone." Another member present said the gentleman was quite right. He had never known a blue or green colored horse to be stung.

THE REVOLUTION IN CUBA.

Its Effect on the Honey Business; Why Cuban Honey will Never Enter the American Markets; Why Wax is the More Profitable Crop; an Interesting and Valuable Article.

BY FRANK REIMAN.

Of late, considerable fear has overtaken some American bee-keepers lest Cuba should be annexed to the United States and honey be admitted free. I would say that there should be no cause of alarm at all, as the comb-honey business is entirely dead in Cuba, and the strained honey will go to Europe, even though the tariff on honey is entirely removed by the United States. The only parties that use Cuban honey in the United States are the bakers, and they will pay 5 cts. more a gallon for Mexican honey. My experience is that all Cuban honey ferments sooner or later. Cuban comb honey must be

sold at once when it is sealed, as in 30 days much of it is unmarketable. For the same reason I have entirely discontinued raising comb honey, for several years being the largest comb-honey producer in Cuba.

The highest price paid for strained honey, delivered in Havana, in the warehouse, is 42 cts. per gallon. The expense in getting the barrels and paying all the freight on the empties from the warehouse until the filled barrels arrive in the warehouse is 10 cts. a gallon. This leaves net 32 cts. a gallon, or less than 3 cts. per lb.

All the above figures are Spanish gold, which is still 10 per cent less than United States money.

Seven cents a pound is the best price offered for comb honey this year; and as the expenses are fully 4 cts. per lb. in comb, it will leave 3 cts. net. No bee-keeper can raise comb honey for that price. Wax is by far the most profitable product from the bees, selling for 30 cts. per lb. all the year round. The exportations of wax exceed the exportations of honey by \$100,000 a year.

At present I have a few more than 500 hives of bees, and expect no less than \$1500 worth of wax this year. As the bees make some honey all the year round, whenever there is only a small flow I cut all the drone comb and all dark or brown comb containing but little honey, and throw it under the hives for the bees to take the honey from. In this manner I cut about 100 lbs. of wax a week from 500 hives. When honey comes pretty lively I cut only wax when I extract, cutting all dark and all drone comb, and placing full combs alternately with empty frames. My hive has ten frames in the bottom and nine in the super, all frames six inches deep. I usually leave one inch of comb at the top-bar for the bees to start straight. There is no time in the year in Cuba when the bees will not rob. The best I have ever seen a hive do in Cuba was to average 15 lbs. of comb honey a week for four months, straight. I can not say that I always keep cutting the comb; but the average, I think, is about ten gallons to the hive in a season of six months, and the other six months the bees must be fed.

For the past three years the honey business has been on a decline in Cuba on account of bad seasons. To my certain knowledge there are not half the bees now in Cuba there were three years ago. Many lost all by foul brood and starvation. I lost last year from 800 down to 300, and most of these were only scraps of swarms; but I succeeded in increasing them to 650 hives by August, when I had to leave for Havana on account of the revolution, leaving a man in charge. Consequently I lost over 100 hives by thieves, queenlessness, etc.

The future of the honey business in Cuba is far from bright. Revolution is liable to break out any minute, as the negroes now have a taste of horse-stealing, and eating oxen free of charge. Ninety-nine per cent of the revolutionists are negroes, or of negro descent. One band of 400 which strayed near

my bee-yard did not have a white man in it. From the best authority I can obtain, the United States troops will leave next June, and I expect another revolution at once then. These revolutions are not to obtain liberty, but are for the sake of getting office to rob the public funds, and the negroes to steal horses. It does not make a particle of difference what political party starts a revolution, the same ones will go, but not to fight. In this last revolution less than 30 were killed fighting, and these were mostly killed with wounds in their back while trying to escape. Some 13,000 revolutionists on the outskirts of Havana were afraid to enter because there were 50 American marines landed in Havana, and 300 more on the cruisers. The future will tell what will become of Cuba. It will probably be a second Haiti unless Uncle Sam takes a hold of it, which is not at all likely. Nueva Paz, Cuba.

[What our correspondent says regarding conditions in Cuba is confirmed by other advices from the same source. He is also correct when he says there is no danger of an invasion of Cuban honey in the United States. Those who are the most familiar with the situation have always said so.—ED.]

THE FUTURE OF THE HONEY BUSINESS.

Will the Supply Exceed the Demand? the Effect of the National Pure-food Law.

BY W. L. PORTER.

In entering a business, no matter what it may be, there are always three phases that an intelligent man will consider: What has been the past history of the business? What are the present conditions? and what are the future prospects? On the first proposition it is a matter of history. There are many volumes of text-books and files of bee literature that will give the investigator an idea of what has been done in the past. We may find recorded that man has given attention to the study of the bee back to a very early day. Honey is spoken of in the Bible, and the question asked, "What is sweeter than honey and the honey-comb?"

The bee in the early history was looked upon as a very intelligent insect, endowed with almost superhuman intelligence. They were supposed to know their master, and to grieve for him at his death; and in order to keep them in their hives, and in a prosperous condition, they must be told by one of the family when he passed away.

There are many things written in the past that are exceedingly interesting. In the early period of bee-keeping the methods of handling them were very crude. The hives were made of hollow logs, wisps of straw, or clay; and to secure the honey the bees were destroyed. There was no great progress made until father Langstroth invented the movable comb, which was over fifty years ago. Since that time the bees have been a

constant study, and their natural history has become familiar to many; and from this dates the period of progressive bee culture.

From this time we find men studying the bees from a financial point; and not very long after this time men began to keep bees as a way of making a living, and the specialist in bee culture soon appears—a man who spends his entire time in bee culture, supporting and educating his family from the products of the bees alone.

Finding this to be the case, we inquire, "Have these men made a fair living and income? Are they intelligent and progressive? Are they on a par with other men in like pursuits? Do they enjoy luxuries of life, and educate their families?"

It may be said that bee-keepers rank well in the way of education and intelligence. Their calling is one that draws out research and investigation. While part of the time a bee-keeper's life is a strenuous one, there is a part of the time when he has time to read up, travel, and become generally well posted; and wherever you find a body of bee-keepers you find men high in honor, intelligence, and sociability.

While bee-men do not make fortunes at the business, they do make an honest and fair competency. There are years that have drawbacks, and years of prosperity; and there are years of low prices and years of good prices. But when the average is taken, there has been fair pay for the labor and investment.

After considering the past and present we may ask, "What is the future of the honey business? Will there be large quantities of honey produced in the future?"

In looking into the future it is only reasonable to expect there will be great advancements made in bee culture. In opening up the West, new fields are coming in which will very soon be the paradise of the bee-keeper. In my travels through the West and Northwest I find that many sections are being reclaimed and watered by the government and other capital.

All of these lands will be the home of alfalfa, and will all very soon be thoroughly occupied by the bee-keeper.

In Southern Idaho the government is spending some fifteen million dollars on two projects, and these lands will soon be ready for the tiller, and the settlers are fast coming in. The same condition exists in Washington, Montana, and Wyoming, as well as in Utah, New Mexico, Arizona, and Nevada. In all of these States there are valleys which have hundreds of thousands of square acres which will produce alfalfa and other honey-bearing plants. These will soon be occupied by settlers, including bee-keepers, and large crops of honey will be coming from every section. In Hawaii and Manila there will be honey produced in large quantities. We shall also find larger amounts of honey coming into our markets from Cuba and Porto Rico in opposition to our own product.

The question now arises, "Will the consumption of honey increase so as to make a

demand for all of this increase of product?" There is every indication that the demand will be adequate for the supply. There are various reasons why this will be true. On the 1st of January, 1907, the national pure-food law took effect. This will take out of the market large amounts of adulterated honey that has been put up and sold for the pure article. This has already affected the price of extracted honey. The demand for the latter has never been so keen as now.

Another thing that will help on the demand will be the thorough organization of bee-keepers. By organization they will concentrate effort and capital to advertise honey and place it before the people, setting forth that it is the only sweet produced by nature ready for man's immediate use. It is stored by nature in the tiny flowers, and gathered by the bees, carried in the honey-sac, and stored in the comb by the bees as nature secretes it in the flowers.

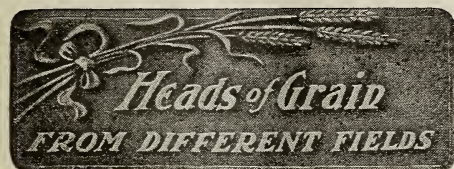
It is a predigested hydro-carbonaceous food, easily digested, so that many invalids can use honey that can not use other sweets. It is certainly true, since glucose has been invented, and has come so generally into use, that Bright's disease, appendicitis, and many forms of stomach trouble have alarmingly increased. Honey is soothing to the stomach and to the mucous membranes, and can be used freely where glucose and even cane sugar can not be used without injury.

This is a time of organization. Both capital and labor combine to push these interests to the utmost extent. This has proven of great benefit to each, and to-day we see the wages of all classes are fully doubled compared with a few years ago. On account of a combination of capital we find most of the products we use going higher and higher. The high wages received makes it possible for the masses to buy and use on their tables that which they think is best for the health of themselves and families; and we see manufacturers catering to this condition of affairs.

There are innumerable brands of food prepared, all of them setting forth that they are predigested, have wonderful health-giving and strength and muscle building qualities. This is wonderfully true of the class of cereal foods, all of them costing from double to treble what the original wheat cost from which they are made; yet the people buy them freely because they believe they have merit. When we take up any magazine we find beautiful cuts, very often colored plates, and advertisements setting forth the merits of the wonderful life-giving pre-digested breakfast foods which have the power to build up the lost and worn-out forces of man. Suppose bee-keepers were all organized, and that each one would contribute a small amount toward a fund to write up and explain to the general public the beauties and superior qualities of honey as a food, setting forth that, for the amount of *vital force*, heat, and strength it gives, it is one of the most concentrated foods, and that the price paid for it, according to all of its good qualities, makes it a very cheap article of food.

It is not the idea to boom the consumption of honey, but merely to set forth the facts so that the public may be educated as to its wonderful qualities, so that all classes of consumers will know its value and use a proper proportion. It will then be seen that there is not too much honey, but not enough to go around, and the price will be advanced to a proper level with other products.

Denver, Colorado.



TWO YOUNG QUEENS LAYING IN A HIVE AT ONE TIME.

I had a little experience yesterday; and, having seen nothing like it in GLEANINGS, I ask for information. On the 1st of July No. 28 had attempted to supersede their queen; but as they were hybrids I killed her and gave them a young Italian. Five days later I examined them and found the young queen laying nicely. I also noticed several cells about ready to hatch. I left them alone, thinking the bees would destroy them. Yesterday I was working with them again, and when I took out the comb next to the side of the hive I saw a large young queen, busy laying. I was surprised, as she looked so much darker than the one I gave them. On lifting out the fourth frame from the side of the hive I discovered the yellow queen. To say I was astonished is putting it mildly. I again lifted out the first comb, and, catching the darker queen, I put her on the same comb as the other. The bees treated her as if she were their only queen, and the queens were at one time no more than three inches apart, but did not seem to pay any attention to each other. Looking further I found an old cell that had evidently hatched. Now, whether this queen was hatched and mated in this hive containing a young laying queen, or whether she came from some other hive by mistake, and why the bees allowed her to remain, is a mystery to me. She, without doubt, was a young queen, as I clip all laying queens.

E. D. ANDERSON.

Sasparco, Texas.

[In the case given, it is plain that the bees were preparing to supersede the old queen, and in doing so must have started several embryo cells supplied with eggs or larvae from this old mother. When you destroyed her, you helped matters along. In the mean time, the queen you introduced began to lay; but, contrary to the usual procedure in such cases, allowed one or more cells to mature, resulting in a young hybrid queen from the old mother which you destroyed. Con-

trary to the usual rule again, neither queen made any effort to kill the other. That two exceptions to well-established rules occurred in the same hive and at almost the same time is rather rare. It is not uncommon for mother and daughter to lay together in the same hive for a time; but in the course of a month the old queen will be missing as a general thing. It is very seldom that two young queens will lay together like this.—ED.]

SOUTHERN QUEENS; ARE THEY NOT AS SAFE FOR NORTHERN BEE-KEEPERS AS THOSE BRED IN THE NORTH?

Referring to p. 498, Vol. 34, I would say that I consider Mr. Coggs shall has done a great injustice to the queen-breeders of the South. On page 828 the inference that Mr. Todd draws points still more to the queens from the South. I certainly think that testimony should be called for, and the truth of the matter known before Southern queens are condemned. It seems that, among the thousands of queens that are bought in the South some one would have found this out before. I for one do not fear the truth of the matter, and am sure that the Southern queen-breeders can show any amount of testimonials from satisfied purchasers in the North.

I feel sure that this matter has been misrepresented, and I hope that you will do all in your power to sift out the truth.

James Island, S. C. H. M. PARKER, JR.

[Referring back to the item by Mr. Coggs shall, in our April 15th issue, we do not find any thing there that positively asserts that our correspondent believes that Southern bees are less hardy than others. Note that he says that those bees that died that winter "filled their brood-nest so full that they all froze, and they dwindled badly." We infer that, because the hives were too full of stores and no winter nest, this was the cause of death, and not because the bees were southernbred. We do not believe that any one would seriously assert that bees bred in the South are less hardy than those bred in the North. The bulk of queens this season of the year are from the South; and yet we venture to state that all such queens will show as good a record for honey as those bred later in the North. If we are misinformed as to the facts we shall be glad to be corrected.—ED.]

THE ADVANCED HONEY PRICES A DETRIMENT.

As peddler, I have peddled for 15 years, and I have the following to say: The advanced honey prices mean a standstill in honey-trade. How can the peddler make a living when his customers are not willing to pay more for honey? I can assure you, too, the honey-trade rests mostly on peddlers. They have to teach the people what honey is good for; and, thanks to GLEANINGS, I am well informed and am able to interest people about bees. The commission house of Hildreth & Segelken as well as Mr. Stringham, of New York, will say that I have drawn many cans of honey from there, and now it

looks very discouraging. I hope that next year may give a better crop, and that we may have regular and uniform prices.

Milltown, N. J. RUDOLPH LICHTWER.

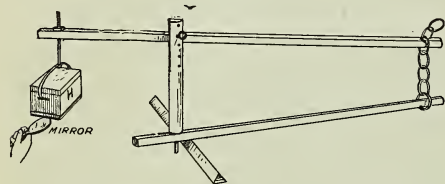
[Since the new national pure-food law went into effect, conditions have materially changed. The reason your customers objected to paying fair prices for honey is because they could buy corn syrup for one-fourth or one-half of what you ask for honey; but all such concoctions, unless properly labeled, will hereafter be barred from the market, and when properly labeled, will not sell. The cane-syrup men anticipate a rise in their product, because the competition with glucose mixtures will be practically eliminated. What is true of pure cane syrup will also be true of pure honey. The public will object to paying these advanced prices for a time, doubtless; but when it understands it is getting more sweet for the money than formerly, and a good deal better flavor, no objection will be raised. We shall be glad to hear from you again about two years hence on the effect of this pure-food law.—Ed.]

A NEW FORM OF HIVE-LIFT.

In submitting this idea I have no comments to make, as I am in the greenhorn class yet. Try it.

WILLIAM BEESON.

Gilt Edge, Montana.



[It would seem as though the hive-lifter proper should show only about half the size, in proportion to the hive, that is here given. The lifter is carried around, we should judge, from point to point, and is set down in front of the hive, when the lever is tilted with the long end up in the air, the short end slanting over the hive. The tongs grab the hand-holes, when the operator gets hold of the long end of the lever, pushes it down, and hooks the chains over the end as shown. This will hold the hive up in the air and enable one to look under the frames with a mirror, or lift a super or supers off the hive.—Ed.]

HOW TO GET RID OF LAYING WORKERS; A PIN FOR TRANSFERRING LARVÆ INTO CELL CUPS.

I took a queen-cell that was about capped over; gave it to the colony, let them hatch it out, and that was the end of laying workers.

I want to tell how I transfer larvæ from the combs to cell-cups, as it is far ahead of the transferring needles or tools that I bought. I take a medium-sized pin and drive it into a small stick about the size of a penholder, then bend the pin at an angle so the stick

will be out of the way. The head will slip under the larva and out again easier than you can get a larva off from a regular transferring-needle. Then the combs are not injured in the least.

San Jose, Ill.

FRED TYLER.

COMB-HONEY PRODUCTION; ALEXANDER'S PLAN FOR FEEDING BACK EXTRACTED HONEY ENDORSED.

I have been feeding back extracted honey for comb honey since 1902, and can vouch for the practicability of Mr. Alexander's plan, p. 649, 1906. Three years ago this was the only way by which I was able to get any marketable honey. The method enables one to overcome in a measure the vagaries of our honey-harvest weather. It also puts out of business the half-finished-section nuisance, if one is willing to do some feeding back after the main flow is over.

Aikin, Md.

J. FORD SEMPERS.

PUTTING IN STARTERS BEFORE THE SECTIONS ARE FOLDED.

I do not remember ever seeing it recommended to put on foundation starters while the sections are in the flat. I took the short block which supports the section off my Daisy, and put on one about 16 or 18 inches long, so that I could put on top and bottom starters at one handling. It is not necessary to have two plates and lamps, for I can slide the flat section along to the proper place. I have practiced putting on starters in the flat a good many years, and think it the best way. A starter that will not stay on to fold the section is not safe to give to the bees. Another important point is that one large plate does for any size of section.

Altona, Ills.

ALVAH REYNOLDS.

HOUSE-APIARIES VERSUS HIVES OUTDOORS.

Has any one tried a bee-house constructed so as to do away with the bee-hive?

St. John, Wash.

PETER TAYLOR.

[Bee-houses have been constructed without any hives in them. We have had one at our place for the last 30 years, but it has long been out of commission. Such a house is not satisfactory, and we would not advise you to invest in any thing of the sort. You can use a building with hives inside; but even then it is better to put the hives outdoors, both for economy and convenience.—Ed.]

A BEE-KEEPER WHO GAVE AWAY SWEET-CLOVER SEED.

The honey crop with us has been quite good. The bees are in good condition for winter. My honey was all sold in my home market. I have given away all my sweet-clover seed—some 35 pounds—in one-pound lots to bee-keepers, and still have inquiries for more. I wish you would state that I have no more seed.

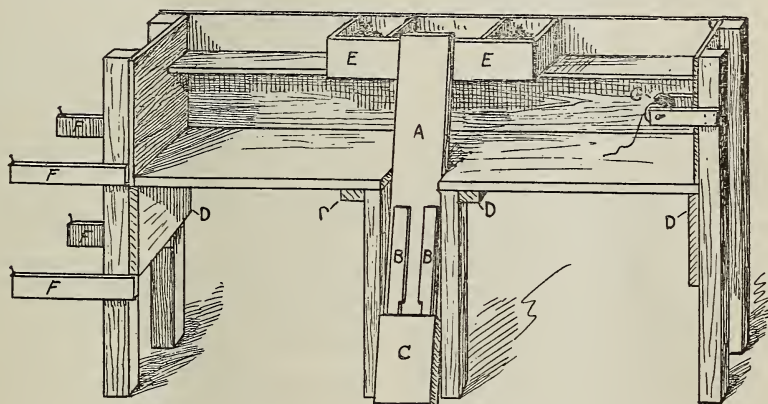
JOS. EGGE.

Willamette, Oregon, Nov. 8.

CONVENIENCES IN THE WORKSHOP; A BENCH ARRANGED FOR NAILING AND WIRING FRAMES.

I have watched with interest the various devices for simplifying the work of the bee-keeper; and as I have a bench for nailing frames which I consider handy, I am sending a sketch and a description of it. This bench is built just the right height so that a man can sit in a chair and have room for his knees under it. Mine is 25 inches from the under side; but being built for a tall man it is higher than the average man will desire.

The standard in the center, A, is to rest the top-bar in when nailing. The cleats, B, B, hold it from falling sidewise; and the block C holds it at the desired height for nailing. This block is nailed over the cleats, leaving a space into which the projecting end of the top-bar will slide, which holds it



much firmer than it would with the bar resting on the extreme end. The whole is made so the bar fits easily, and is given a slight backward tilt.

The bench being weakened in front, where the notch is sawed for this standard, I fastened two strips, D, D, of inch lumber to the under side of the table, at front, giving them a slight backward tilt, and fastened them to the bottom of the standard A, the whole resting on the floor. At the back of the bench are four nail-boxes, E, E, in which I keep my nails, end-spacing staples, etc. From the boxes to each end of the bench are left shelves on which I keep my knife, pincers, nail-set (which is just the right size to slide under the end-spacing staple to give it the desired depth), and any little tools I need.

The pieces nailed on the end, F, F, F, F, are to place top and bottom bars upon, where they are within easy reaching distance. There is plenty of room at the left on the bench to lay end-bars after the nails have been started. I start nails in the bottom and end bars and pile them on the bench, and at the end as long as I have room, before I begin nailing up. At the right is a reel, G, for wire.

LEON C. WHEELER.

Barryton, Mich., March 13, 1906.

[Almost any work-bench can be made more convenient by having an extra shelf or ledge just a little way above it so that extra tools, nails, and the like can be put on it, leaving the bench proper free for the actual work in hand. Your work-bench is probably as convenient as any thing that has been thus far shown.—ED.]

THE IMPERIAL VALLEY OF CALIFORNIA; AL- FALFA FOR CATTLE.

I think I have found an ideal bee country, one where the extractor can be used every month in the year. We not only have the best alfalfa lands in the world, but wild flowers in endless variety. Five acres of alfalfa will keep six head of dairy cows and a few pigs the year around. This old valley, you know, has been known in our old school geography as the Colorado Desert, a part of the chain

of Death Valleys where untold thousands have perished with heat and thirst, following the ever receding but seductive mirage. But all the horrors of the old days are gone. Canals and ditches are everywhere carrying the fructifying waters of the great Rio Colorado to the growing fields of grain and meadow. On every hand the stately eucalypt, pepper-tree, and date palm and palmetto are springing up as if by magic. Our prevailing winds are from the Pacific Ocean, purified and sucked dry in their passage over the San Jacinto Mountains, making this one of the most healthful places in the world. To all sufferers with asthma, lung affections, or rheumatics, I would say, get you a tent, gun, and fishing-tackle, and hie to this favored clime and live close to nature for a few months, and you will surely be rewarded with health and a life-long affection for our grand valley.

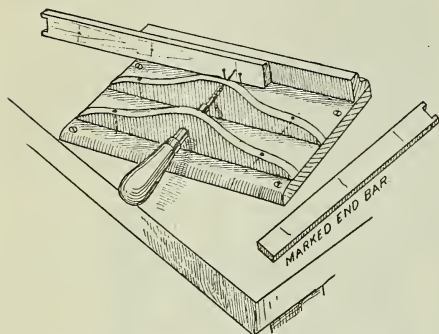
Holtville, California.

BYRON IAMS.

A HAND DRILL FOR PIERCING END-BARS.

I see my California brother has sent you a drawing of a machine for punching holes in end-bars to receive wire, and I notice your comments on the same. I will warn you beforehand that I too am a Canuck, so, be care-

ful. In the first place, the machine I use drills the hole, leaving the edge of it rather harder than the rest of the wood. The whirling motion of the drill forms a glaze in soft wood. This might save the wire from cutting in the wood. The machine is simply a No. 1 automatic drill made by the Goodell-Pratt Co., Greenfield, Mass. It cost \$1.50, and with it a set of small drills. Take one of the smallest ones; cut it off so as to leave a drill about an inch in length; sharpen the same as any drill; place the machine in two



hard-wood brackets—one for the large part and the other for the small portion. The holes in the brackets should fit snug, avoiding any play. Fasten the brackets to an inch board by the use of screws at either ends; also attach a 1×1×4-inch piece directly in front of the drill, about $\frac{1}{2}$ inch from the drill-point. When the same is drawn back on either side of the drill-point, drive an eight-penny nail close enough to the punch-block to allow the end-bar to slide through; mark the desired space wanted. With a firm quick push, the drill passes through the end-bar. Draw it back and slide the end-bar through to the mark, when the right hand starts the drill again. Fasten the machine on a bench; and as the drilled bars pass through they may fall in a box or basket placed there for that purpose. The writer can drill at the rate of 1360 holes per hour. I would not take ten dollars for it if I could not get another like it. WM. LOSSING.

Phoenix, Ariz.

COLOR OF HIVES; A VARIETY OF COLORS UNDESIRABLE.

On page 1428 Wm. Lossing tells his experience with bees marking their location by the hives being painted different colors. I agree with Mr. Lossing as to the bees, where the hives are painted different colors, marking their location *largely* by the color; and it is this trait that makes many colors in hives undesirable. I once had the red, white, and blue idea, and found that, if a colony in a white hive swarmed, or if we made a "shook" swarm, or if for any reason we changed the hive-body and replaced it with another, unless the new hive was white or of the same color as the removed hive, the bees would scatter around in the nearest hives to the old location, most of them going into the

nearest hive of the same color as their old one, which will materially weaken a colony at just the time we want it at its best. I am painting my hives all one color again. I have worked with hives standing from one to three inches apart under sheds; and while I think some bees, in their hurry to get home with their load, sometimes enter the wrong hive, I think they are always welcome, and would be invited to come again (when they have another load). The queens should be raised in nuclei outside. IRVING KINYON.

Camillus, N. Y.

WHERE BEES GATHER PROPOLIS.

We had quite a flood recently, and the water washed rails, etc., down. The rain washed out and bruised quite a lot of roots and wood of sumac, and out of them oozed a dark pitch, the regular genuine propolis. I could tell by the odor; and I saw the bees busy gathering it. I tested it and compared it with the propolis in the hives, and it smells and tastes the same. At first I wondered why the bees were gathering there along the bank of the creek, and went and looked, so I found they were at the roots. I tasted and found it was not sweet. I was reading in the A B C of Bee Culture, and found that it seems to be unknown just where the bees get it, so I thought I found out something that might add to our bee knowledge.

Queen, Pa.

WM. CLAR.

[It has long been known that propolis is a substance that bees gather, but the exact source from which they gather it is not always known. This is true of pollen and honey also.—ED.]

BEES IN TENNESSEE GATHERING HONEY IN JANUARY.

As it is very unusual for bees to build comb and gather honey and pollen in mid-winter, I thought a report of such an incident would interest you. For the last four days, beginning with the 16th, my bees have been carrying in pollen and honey the same as in May. I examined a few colonies this morning—one in the empty super with extracting-frames in. They had built three combs about half way across the frames, and the same in depth, and as white as if built in June. Nearly all I examined had whitened their combs on top. The soft maples, elms, and willows are in bloom.

Atwood, Tenn., Jan. 14. GEO. W. RICH.

WORM-EATEN PINE.

The white pine of New Zealand is subject to a grub or worm that riddles the lumber through and through until buildings are destroyed. It is a very small grub, the beetle being only $\frac{1}{4}$ inch long; but they riddle sound boards through and through until they crumble up like rotten wood. If you could give us a remedy for stopping it in our hives we should be much obliged. J. C. HOBBS.

Palmerston, N. Z.

[Carbolineum arvenarius is said to be very useful for this purpose in this country.—ED.]



FLORIDA "FLYING-MACHINES."

If anybody should ask you what A. I. Root is doing this winter you can tell him he is down on an island off the west coast of Florida, manufacturing flying-machines. No, that isn't quite right—not "manufacturing" but *creating*. But *that* is not right either, for it is not he that "creates," but "God," who "in the beginning created the heavens and the earth." A. I. Root has graciously been permitted to be present and to witness the "creating," and perhaps to help some by running errands, and, to a certain extent, in a humble way, assist in the creating. Yes, and we have the "flying machines" that not only *fly* but they are the most beautiful and *wondrously* wrought conceptions of the infinite mind that pen, poet, or painter could well conceive.

Years ago I won the gratitude and affection (I think this last is true) of a little Brown Leghorn hen by saving her life when our teamster was going to "wring her neck" because she *persisted* in roosting on the back of one of the horses. I gave her a decent roosting-place in cool weather, and she showed her gratitude by giving me eggs and chickens until I said to Mrs. Root:

"Sue, I should like no better fun than to see that little hen cover a farm with her chickens and their posterity."

I have many times since looked back and thought I could afford to give a year or more of my life just to enjoy the fun of seeing how large a family one good hen (with a suitable companion) could evolve in, say, a year or a year and a half.

I have already told you that Mr. Shumard, by my direction, purchased five White Leghorn pullets. Well, these five were descendants of a little White Leghorn hen that (like the one I have mentioned) had a *mania* for laying eggs and hatching chickens, winter and summer, year after year. I said White Leghorn; but the mother had also a dash of game blood in her veins, and this helped, probably, to make her such a devoted and fearless mother in caring for her chickens. Mr. S. brought the five pullets home,* but they were so wild that, when let loose, instead of going with his regular flock all five decamped for the woods and had been there alone perhaps a week or ten days when I reached the island. As they had neither food nor *water* (except salt water) he thought they would eventually come up with the

other poultry. Not so, however. When I first saw them they hid like wild birds. I took to them at once. There was something aristocratic and high-bred in the way they carried their heads high up in the air, with their tail feathers standing almost horizontally straight back. As they are pure white this peculiarity of carriage is about the only thing that indicates their game ancestry. When caught they were so exceedingly wild it was for some days a hard matter to make friends with them at all. They are in a circular yard about 50 feet across; but for a long time they would skulk out of sight amid the clumps of cedar whenever I came in sight. Little by little I have gained the confidence of these high-toned wild birds, and, with the help of plenty of good food and water, they soon began to flesh up and get handsomer every day. The first egg one of them laid was taken "straightway" to the incubator, and now it is a handsome white chick ten days old. A full-blood choice Leghorn rooster was given them, so you see I am going to have a family of respectable ancestry—that is, according to *my* notion.

I like to hear a boy's voice just when it is changing, indicating he is turning from boyhood to manhood. While I think of it (?) I also like to listen to the musical voices (and laughter) of young *girls* that are just turning from girlhood to womanhood; but I do not know that I ever enjoyed any thing much more than the notes of one of my wild pullets when she did her first cackling over her first egg. Her poise as she stood on one leg was grace and beauty, and the high key and flute-like note of her childish cackle thrilled me through and through.* But, "what has all this to do with flying-machines?" do you ask? Patience, please. It is just ahead of us.

Stoddard, in his book, "The Egg-farm," lays great stress on the importance of *exercise*—exercise almost from the day the chicken is hatched. My oldest ones are now a little over two weeks, and they go chasing about outside the yard from the time they can see in the morning until it is dark at night. They are about ten days older than the white one from the pullet's first egg; yet this one, when he was 48 hours old, followed the hen with her 27 older ones. I tried to keep him in a little longer; but he caught sight of the rest, and *would* go. These chickens are almost constantly on the jump. When hungry they "leg it" back to where they know the wheat is kept for them (and for them only), and then they are off in the woods again. The hen pretends to be mother to them all, but I am quite sure those two weeks old would do quite as well without a mother, *on this island*. Now, it is not only the legs that need exercise, but it is the wings also. All our fowls on the island roost in the trees. While on a visit last fall to Dry

*To-day, Jan. 22, for the first time I got five eggs from the five pullets. I had been having four for several days. I planned to have my five hens keep the incubator running continuously, but this is going to overload it.

Later.—Yesterday, only three eggs; but to-day, 24th, five eggs again.

*He tried to buy the mother, but they would not sell her at any price, and consented to sell these pullets only because they could not be kept from getting out of the yard.

Knob, Laclede Co., Mo., at a brother-in-law's, I was greatly interested in their flock of about 50 turkeys. I was particularly interested in seeing them start from the ground and fly to the top of the highest trees. Ever since I have been studying flying-machines I never tire of seeing all kinds of birds *fly*. While I am about it I want to say there are two things I especially admire in the region about Dry Knob. First, nobody ever steals poultry there (no saloons), no, not even when turkeys roost on the fence right adjoining the highway at *Thanksgiving time*. The other is, there is only one kind of *time* in all that region. *Everybody* has railroad time. "Sun time" and all that nonsense is unknown.

Well, Stoddard is right, I think, in saying that chickens must be taught at a very early age to use their *wings* as well as legs. Encourage them in every way to learn to fly. Open-air exercise cures every thing, and where in the world do you find *any thing* that combines *both* exercise and open air like flying? One day, in feeding my old hen with her flock of 29, I dropped some feed on top of the work-bench. She hopped up and found it and commenced her shrill "cut-cut-cut." Like loyal soldiers, a lot of the ten-day-old chicks essayed to fly up. Some of them got more than half way up; and when I set a box just right it was great fun for them to get up where their mother was. I began then admiring those beautiful little rudimentary wings—God's handiwork, or, perhaps we might say, *fingerwork*. They are now about 18 days old. They have wheat all the time, but I give them for a change dry bread moistened with water, or other things I know they are fond of. I do not know but the little "darlings" have got it into their heads there is sure to be "fun going on" of some kind whenever I come round, and they fly up on my hands and arms, and on the dish I am holding, and give me all the chance I could ask for to study the penciling of those beautiful gauzy wings as well as the graceful airy motions that *God* taught them in order that they may fly.

While I am writing I have just spread out one of the soft lacy wings in my fingers, and almost fear I shall lose my love for flowers in admiring these *animated* creatures, so full of life and energy. The Wright Bros. have done a wonderful work; but, oh dear me! when will mankind *ever* approach any thing so strong, light, and graceful as a chicken's wing? and when shall we ever get the wondrous power and strength for so little weight as was tied up in a tiny fragile eggshell only 18 days ago?

Did I forget to mention that my good old friend the sitting hen takes all the chicks as fast as they come from the incubator? Well, she does; and when the late arrivals get tired and chilly she broods them, while the older ones roam near by and scratch to their hearts' content.

A. I. ROOT'S WATERING-DEVICE.

I think I have seen most of the watering-devices; but where they are on loose ground

the fowls will scratch more or less dust or dirt into them. Here is one that pleases me. Get a board an inch larger around than a common saucer. Round or eight-sided is rather better than a square board. With a compass draw a circle an inch larger in diameter than the saucer. Now drive ten-penny nails in this circle, $1\frac{1}{2}$ inches apart. Let the nails go in about half through the board. This forms a little stand, as it were, with a lot of legs; and, when set over the saucer, it lets the chickens' heads in to drink, but no more. Of course, 29 chicks will soon drink a saucerful; but you are to get the biggest bottle you can find, and bore a hole in the center of the board large enough to let the neck of the bottle go down a little below the top edge of the saucer. This will keep the saucers just level full, and no more, as long as there is water in the bottle. To keep it clear away from dust and trash I would set it up on a box and have steps or stairs for very small chickens to go up. A similar arrangement will do for wheat or any kind of grain. To keep the older fowls from interfering or bothering the chicks I have the wheat and water under my work-bench, with poultry-netting clear around the legs of the work bench. The mother-hen is let into this inclosure nights, so she and her 29 are secure from cats or any other night prowlers. Now, at the other end of my workshop I made a nest in one corner of pretty good size, with an opening through the wall of the shed. This is a retired nest that seems to please the laying hens. Well, one night the hen with her 29 got in here with her brood, and *she* decided it was a better and more secure place for her large family than in her inclosure under the work-bench, as explained. I roused her out and made her take her old place, but she did a lot of scolding about it.

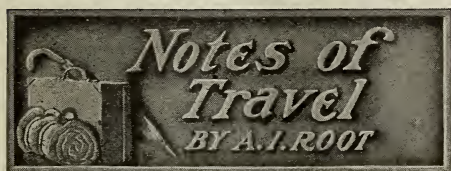
Well, last night I came round just as she was making for this forbidden place again, when I said, "No, no! you can't go in there." She obeyed orders, but with a snarling protest. When she objects to my "dominion" she has a saucy note that I understand as well as words. It is something like this: "You, you, you," as much as to say, "Well, who are you, anyhow?"

Mr. Cosgrove said in the *Rural New-Yorker*, about a year ago, that the talk he had with his pullets when they are just commencing to lay was often more interesting to him than the talk of many "humans," and I think I fully agree with him. I have one comical little chick that was "born (in the incubator) out of season," as it were, and he follows me everywhere, and keeps up an incessant talk and visiting. For the very small chicks I fixed for water a tin box-cover placed on a block of wood with nails all round the cover driven slanting with their tops all near together. They very soon learn this means "drink," no matter where I place it. Well, this morning my pet chick came running up to me full of animation and talk, and then he ran up to the drinking-apparatus, putting his head between the nails as if to drink, and then scampered back to

me. I said, "Why, bless your little heart, is the water really all gone?" When I brought some more, even before he had taken a drink, he uttered a queer little note of thanks and contentment that was sweeter to me than music.

Dear reader, don't think I am making too much ado about a common every-day chicken. What I heard was *God's* voice—the "still small voice" of the great Father, the Creator, speaking through one of the humblest of his creations. Again I stand appalled at the wondrous intelligence and matchless energy stored away in that tiny creature less than a week old. My chicks of 20 days now sail over the workbench, and seem to take delight in fluttering their new and gauzy wings over my shoulders and in my face.

I have just received a lot of "rooted cuttings" from florists in the North. As they unfold their pretty leaves and take root in their little pots, they too speak of the little speck of the great Creator that is tied up in their little buds, roots, and leaves.



I reached Braidentown, Manatee Co., Fla., after 10 P.M. Saturday night, Dec. 15, but was awakened before daylight by the vociferous crowing of the roosters. By the way, it seems to me the feathered tribes crow, cackle, and sing louder in Florida, or perhaps this part of Florida, than anywhere else. The hotels are two slow for me, especially Sunday morning, so I got breakfast at a restaurant, and was out in the glorious country before friend E. B. Rood's folks had been to breakfast. As part of my errand there was to get something to study the Sunday-school lesson I was very soon happy with the *Sunday School Times*. Friend R. has a large, very bright, and intelligent Bible-class in the Presbyterian church, and this was turned over to me. Before closing, the superintendent said there was a man with them who *always* attended Sunday-school; and if he ever brought up where there were none, a Sunday-school was started *then* and *there*. Said he, "Just one year ago he did this at Osprey (our county), and he gave it such a good start that, when he went back north, it kept on and is going yet. He will talk to us briefly." After the school was over we listened to an excellent sermon.

Dear friends, I am aware I have been criticised for some things I do and say on the sabbath; but while I can feel that the Holy Spirit is with me I do not believe I make any very serious mistake. Jesus said,

"Wherefore it is lawful to do good on the sabbath day." Mr. Westwell, one of our Medina employees, recently moved to Florida on account of hemorrhage of the lungs. He is located out in the country five miles from Braidentown, and on the way to my destination. When I told friend Rood I had planned to walk out to his place Sunday evening, in time for the evening meeting,* he declared I should not go on foot, even if it *was* true that his horses were never hitched up on Sunday for any other purpose than going to meeting. I reached there a little before meeting time. A revival had been going on there, and I was pleasantly surprised to see extra seats had been improvised in the little church by putting planks across bee-hives. When the prayer-meeting was about half over, the man who owned the hives remarked that A. I. Root was present, and the leader suggested that I be requested to occupy the remaining time. No doubt some of the good people feared when I started out that I was forgetting I was in a Sunday-evening prayer-meeting. I spoke something as follows:

"Dear friends, it was something over forty years ago that my attention was directed to the honey-bees. For a year or more good people thought it was a pity I should neglect a good business to waste time and money in studying bees. But after I had secured a *barrel of honey from one hive, in one season*, they began to think there was, after all, at least some 'method in my madness.' I did this by means of the honey-extractor, and I believe I made the first one of 'all metal' the world ever saw. Well, at that time there were many patent bee-hives—expensive structures with moth-traps, glass drawers, etc. An 'individual right' was \$5.00 or \$10.00, and the hive about as much more. I soon declared no patent hive was wanted. For the hive-body, all that was required was a simple plain box, *without top or bottom*, so the hives could be tiered up to accommodate the size of the colony or swarm, or, in other words, to adapt it to the ability of the queen. I named it the *Simplicity bee-hive*. Such hives are now in use all over the world. When I first got it out and declared it was all the bee-keeping world needed, I had visions and great anticipations. But, dear friends, in all my visions and day-dreams of its usefulness, I never thought, until tonight, it might also be used to help spread the gospel of Jesus Christ by making a convenient and secure support for the seats we sit on. May God be praised that I have lived to see my pet bee-hive consecrated to such a purpose. May the good brother who was willing to contribute even his hives to help along a revival meeting have a rich reward; and may God help us, each and all, to be equally ready to respond with *all* that we have and all that we are, for his honor and his glory."

These Simplicity hives were probably of

* When I decide circumstances justify me for Sunday, I *prefer* to go on foot because this requires no Sunday labor for any man or beast.

my make years ago, for the good brother had brought them all the way from "old Missouri." They had served to hold tons of honey, and were, apparently, good for tons more in the future. The next morning, the proprietor of the hotel said, when I took his hand at parting, "Mr. Root, it has been a great privilege to feel that I have met and had a talk with one whose writings I have followed for so many years," for he too was a bee-keeper at one time in his life.

Now, friends, are you sure I am wrong when I feel that God calls me, at least, to make Sunday a busy day when there is so much to be said and done? It is a day of rest to me, because my week-day duties are all laid aside. "Wherefore it is lawful to do well on the sabbath day."

POCKETS AND HOW TO USE THEM, ESPECIALLY WHILE TRAVELING.

I don't suppose this will apply very well to the women-folks, for they do not have any pockets, or at least very few; but we men-folks, in the way clothes are ordinarily made, have a dozen or more. Now, I have learned by experience, and sometimes by sad experience, how to use my pockets. When I start out traveling I always keep one pocket for my ticket. I never put it anywhere else, and I never put any thing else in my pocket with the ticket. Then I never have any trouble from hunting for my ticket when the conductor comes around for it, if he comes along when I am not looking and touches me on the shoulder. Then I have another pocket for my mileage-book—the one I am going to use next. I never put any thing else in that pocket. How often we see people, especially on trains, pull a whole lot of stuff out of one pocket, and then hunt in another place and then another for a ticket! If they do not find it at all, there is sometimes serious trouble. Then I have another pocket, for my railroad folder; and I study that folder so as to find out all about the road I am traveling over, and all about my connections where I take another road. After I had lost some hard-earned dollars by not being posted in time, I have learned to *save* a good many dollars. Then I have another pocket, for my silk handkerchief. I do not want any kind but silk, but other folks can do as they please; and I do not want any thing else in the pocket where my handkerchief is. If you push your ticket in on top of your handkerchief when you are in a hurry, you may pull it out with the handkerchief and lose it, and so with other things. In a similar way I have a pocket for my change, one for my bills, a pocket for my pocket knife, a pocket for my spectacles, and a pocket for my watch. One of my hip-pockets I use to put my handkerchief in when it is not very clean. That is in order to have at least *one* clean handkerchief all ready for instant use. My other hip-pocket is for shoe-laces. You may ask what in the world I want of shoe-laces. Well, when I

rode a bicycle I kept them to tie packages on my handle-bars; and if you want to tie up a neat handy package of any kind, there is nothing else so neat as shoe-laces of assorted lengths. Then I have still another pocket, for letters that I am not ready to file; another one, for addressed postal cards and envelopes so I can write home on the train, and still another, for lead-pencils. May be you wonder where I find room for so many pockets as I have enumerated. Well, there are five in each coat; five in my vest; five in my overcoat, and five in my pants. That makes twenty at least. Oh, yes! there is a little pocket in my overcoat that I use for checks when I check my baggage. I never put any thing else in that pocket, and I can always put my fingers on it in a moment. Now, I do not know that I would have quite so many pockets if I were bossing the job; but they are already there, and I have outlined as above so as to make use of them; and it helps me a good deal to keep happy and to keep my nerves steady, to feel that I can put my fingers instantly on whatever may be needed when I am traveling.

OUTDOORS BETTER THAN HOUSE.

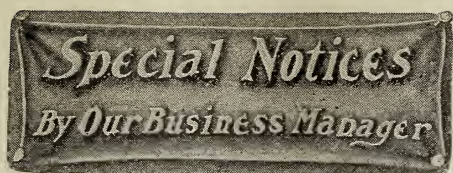
"Home is the most dangerous place I ever go to," remarked John Muir, the famous geologist and naturalist. He was on the train returning from Arizona to his home in Martinez, Cal., after the earthquake. "As long as I camp out in the mountains, without tent or blankets, I get along very well; but the minute I get into a house and have a warm bed and begin to live on fine food, I get into a draft and the first thing I know I am coughing and sneezing, and threatened with pneumonia, and am altogether miserable. Outdoors is the natural place for a man. Walk where you please, when you like, and take your time. The mountains will not hurt you, nor the exposure. Why, I can live out for \$50 a year for bread, etc. All I need is a sack for the bread and a pot to boil water in, and an ax. The rest is easy."—*World's Work*.

The above may be putting it pretty strong, but there is certainly lots of truth in it, and thousands of people are just beginning to find it out. Both "chickens" and human beings, in many localities, would be far better off if their houses were burned up and the occupants turned loose right out in God's open air.

GIVING THE WOMEN A RIGHT TO VOTE AT LOCAL-OPTION ELECTIONS.

BELOW is the resolution of the recent Anti-saloon League Convention:

We recognize the merit and value of the measures championed by the Woman's Christian Temperance Union to give women the right to vote at local-option elections. Without committing the League to the general proposition of Woman's Suffrage, we deem it just that the wives and mothers should have equal opportunity with the husbands and fathers to protect their homes and families against the peril of the liquor traffic, and we pledge to the W. C. T. U. our hearty cooperation in securing the passage of their measure.



SWEET-CLOVER SEED.

We have a good stock of white unhulled sweet-clover seed which we are selling at the following prices: 1 lb., by mail, 22 cents; not postpaid, 12 cts. per lb.; 10 lbs., \$1.00; 100 lbs., \$8.00. We have only a limited amount of the unhulled yellow variety and of the hulled white variety, either of which will cost 8 cents a pound more than the unhulled white while it lasts.

TOBACCO DUST.

We have to offer two kinds of tobacco dust used as an insecticide and fertilizer on plants in greenhouse work. A fine dust made in part from ground stems we offer at 3 cts. per lb.; 10 lbs. for 20 cts.; 100 lbs., \$1.50; by the case of about 300 pounds, at 1 1/4 cts. per lb. A better grade, not so fine, will cost 1 cent a pound more than above for a like quantity. Sample mailed on request to those interested.

SECOND-HAND FOUNDATION-MILLS.

We have the following second-hand comb-foundation mills to offer. We give a brief description of each, and shall be pleased to mail a sample of foundation, representing any one or more of these mills, to those interested, on application:

No. 058, 2 1/2 x 8-inch hex. thin-super mill in good condition. Price \$12.00.

No. 059, 2 1/2 x 8-inch hex. extra-thin-super mill in good condition. Price \$12.00.

No. 072, 2 1/2 x 10-inch hex. medium-brood mill in fair condition. Price \$15.00.

No. 077, 2 x 10-inch round-cell brood mill in old-style high frame, in good condition. Price \$12.00.

No. 075, 2 x 9 hex. brood mill in the oldest-style wood-base frame. Original price of this machine was \$80.00. We offer it for \$10.00.

BUSINESS OUTLOOK.

Judging from the orders and inquiries which we receive, there is an optimistic feeling concerning the coming season. Business in most lines is booming to such an extent that we are obliged to anticipate our wants months in advance in order to get stock of different kinds when we want and need it. Prices of honey were never more firm at this season of the year, and available supplies seem to be limited. With the price of bee-supplies no higher than they have been for several years in spite of advancing cost of materials there is abundant reason for stimulating trade, for there is no assurance that present prices can be maintained through this season. If the demand becomes so great that surplus stocks on old contracts are used up, an advance in price will be inevitable. We are finding greater difficulty than ever before in our experience in getting cars in which to ship our goods, and the traffic on the railroads is so heavy that it is congested, and goods are delayed in transit. If you would not be disappointed in getting what you need in time, do not put off ordering too long.

Convention Notices.

The Southeastern Minnesota Bee Association will meet in the court-house, Winona, Minn., on Tuesday and Wednesday, Feb. 26 and 27, 1907. Everybody is invited.

E. C. CORNWELL, Sec.

Dear Sir:—I am instructed by the Executive Committee of this association to send you the enclosed announcements for the information of your readers.

St. Paul, Minn.

WALTER R. ANSELL.

The Minnesota Bee-keepers' Association, which was founded in 1888, has made a new departure this year by incorporating, with a membership of 51, under the educational laws of the State of Minnesota. By the acceptance of its three delegates to the meeting last month of the Minnesota State Agricultural Society, it is recognized as the State Association. With its new lease of life it has adopted a new constitution and by-laws, its objects now being the promotion of scientific bee culture and of the general interest of the bee-keepers of the State of Minnesota. To assist the State authorities in the enforcement of laws against the adulteration of honey, and for stamping out foul brood, and to cooperate with the National Bee-keepers' Association in defense of its members in their lawful rights. Article VII, reads:

"Any member shall have the right to vote by proxy on any subject and at any general meeting, provided that no member present shall vote more than two proxies."

The association is affiliated with the National Bee-keepers' Association, so that, by payment of \$1.00 annually, a bee-keeper may become a member of both associations.

Besides its annual meeting in December it will in future hold a spring meeting and another during the Minnesota State Fair week, and the proceedings of each meeting will be published by circular to the members. In future, Coöperation will be the watchword of its policy.

Subscriptions should be sent to the Secretary, Mr. Chas. Mondeng, 160 Newton Ave., N. Minneapolis, or to the Treasurer, Rev. J. Ridley, Monticello, Minn.

KIND WORDS.

THE CITY AND THE COUNTRY, BY AN ENGINEER.

I was raised on a farm, which I left twelve years ago to learn steam engineering, in which I have been fairly successful. But life in the city was very unsatisfactory; and, after the greatest loss of our life, the death of our little girl, we moved to a small place in the country. I still retaining my position as engineer. Now my wife and I, instead of spending our evenings and money seeking fresh air and amusement, find health, happiness, and money in caring for a cow, some pigs, poultry, and a large vegetable-garden. I ride a bicycle or walk three miles to work, all kinds of weather, and never was in better health. Oh if all the thousands that live in the cities could only realize the benefits they would get from working just a few feet of earth!

I write these lines hoping they may be of some encouragement to you in your good work. Keep after the humbugs and the drink evil.

Somerville, N. J.

LEWIS B. THATCHER.

Many years ago, when I was a young girl, my father kept a small colony of bees, and for several years he was a regular subscriber to GLEANINGS. I became much interested in the pages devoted to Our Homes, and your earnest home-like talks there had much influence in my early Christian life. My home was not a religious one. My father, though notably an honest, generous, and kind-hearted man, was never a professing Christian. My mother was a professed but not progressive Christian, so we children had scant religious training; and, strange as it may seem, it was in a bee-culture journal that I first learned to see the vital connection between truly righteous conduct and the religion of Christ. Holiness of heart must express itself in holy action was the lesson your Home talks impressed upon me. Many times in after-life, when tempted to be unjust or dishonest in trifles, the thought of the pennies you returned would come into my mind. Soon after I became interested in a study of the epistles, and from them to the gospels; and so I found Jesus, and learned that it was he who had been leading me through that by-path to himself.

Again thanking you for the talks in Our Homes, and wishing you continued prosperity and growth in grace, I am very sincerely yours,

Ashkum, Ill.

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If you will compare a sample of it with others, you can see and feel the difference.

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Put your samples out in freezing weather and then try to bend them.

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The others will all break and crack!

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work loose and spring a leak as all other caps do.

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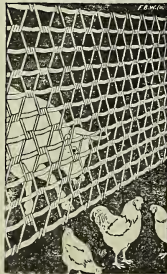
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